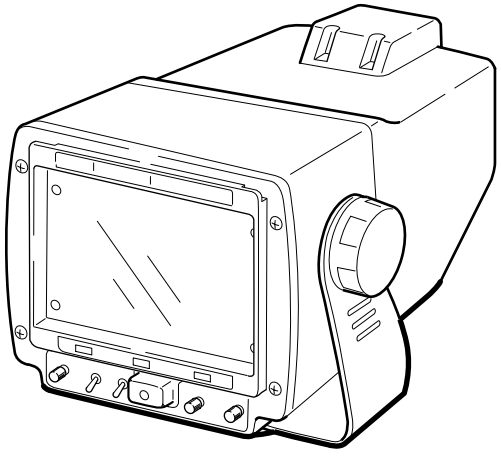
# SERVICE MANUAL

| MODEL | DEST. | CHASSIS NO. |
|---|---|---|
| DXF-51 | JPN | SMC-340-A |
| | Serial No. 30,001 and higher | |
| DXF-51 | US/CND | SMC-341-A |
| | Serial No. 10,001 and higher | |
| DXF-51 | AEP | SMC-342-A |
| | Serial No. 40,001 and higher | |

| MODEL | DEST. | CHASSIS NO. |
|---|---|---|
| DXF-51 | US/CND/JPN | |
| | Serial No. 100,001 and higher | |
| DXF-51 | CE | |
| | Serial No. 400,001 and higher | |

**REVISED-1**



ELECTRONIC VIEWFINDER

SONY

## ⚠警告

このマニュアルは，サービス専用です。
お客様が，このマニュアルに記載された設置や保守，点検，修理などを行うと感電や火災，人身事故につながることがあります。
危険をさけるため，サービストレーニングを受けた技術者のみご使用ください。

## ⚠WARNING

This manual is intended for qualified service personnel only.
To reduce the risk of electric shock, fire or injury, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

## ⚠WARNUNG

Die Anleitung ist nur für qualifiziertes Fachpersonal bestimmt.
Alle Wartungsarbeiten dürfen nur von qualifiziertem Fachpersonal ausgeführt werden. Um die Gefahr eines elektrischen Schlages, Feuergefahr und Verletzungen zu vermeiden, sind bei Wartungsarbeiten strikt die Angaben in der Anleitung zu befolgen. Andere als die angegeben Wartungsarbeiten dürfen nur von Personen ausgeführt werden, die eine spezielle Befähigung dazu besitzen.

## ⚠AVERTISSEMENT

Ce manual est destiné uniquement aux personnes compétentes en charge de l’entretien. Afin de réduire les risques de décharge électrique, d’incendie ou de blessure n’effectuer que les réparations indiquées dans le mode d’emploi à moins d’être qualifié pour en effectuer d’autres. Pour toute réparation faire appel à une personne compétente uniquement.

**WARNING!!**

**AN INSULATED TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.**
**THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.**

**SAFETY-RELATED COMPONENT WARNING !!**

**COMPONENTS IDENTIFIED BY A ⚠ MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.**

**ATTENTION!!**

**AFIN D’ÉVITER TOUT RISQUE D’ÉLECTROCUTION PROVENANT D’UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D’ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE.**
**LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ Á L’ALIMENTATION SECTEUR.**

**ATTENTION AUX COMPOSANTS RELATIFS Á LA SÉCURITÉ!!**

**LES COMPOSANTS IDENTIFIÉS PAR UNE MAPQUE ⚠ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D’UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÈCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L’IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIÉS DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU’UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.**

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SONY

3-859-686-**03**(1)

# *Electronic Viewfinder*

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使用説明书

お買い上げいただきありがとうございます。

**⚠警告** 電気製品は、安全のための注意事項を守らないと、火災や人身事故になることがあります。

この取扱説明書には、事故を防ぐための重要な注意事項と製品の取り扱いかたを示してあります。この取扱説明書をよくお読みのうえ、製品を安全にお使いください。お読みになったあとは、いつでも見られるところに必ず保管してください。

## DXF-51

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English

## Owner's Record

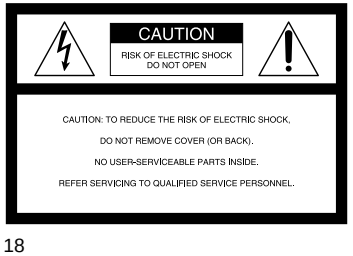
The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. DXF-51 Serial No. _____

**WARNING**

**To prevent fire or shock hazard, do not expose the unit to rain or moisture.**

**To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.**


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**For the customers in the U.S.A.**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

**For the customers in Europe**

This product with the CE marking complies with the EMC Directive (89/336/EEC) issued by the Commission of the European Community.
Compliance with this directive implies conformity to the following European standards:
• EN55103-1: Electromagnetic Interference (Emission)
• EN55103-2: Electromagnetic Susceptibility (Immunity)
This product is intended for use in the following Electromagnetic Environment(s):
E1 (residential), E2 (commercial and light industrial), E3 (urban outdoors) and E4 (controlled EMC environment, ex. TV studio).

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English

**Section 1**
**Operating Instructions**

Reprinted from the operating instructions

# Features

The DXF-51 is a 5-inch monochrome electronic viewfinder, designed for use with Sony DXC series CCD color video cameras.

- High-resolution picture tube with a horizontal resolution of over 650 TV lines.
- H/V regulator ensures a stable picture under all conditions.
- Automatically responds to EIA standard (525/59.94) and CCIR standard (625/50) signals.
- Controls from a camera for the adjustment of image size transmitted via 16:9 (V compression) and 4:3 signals.
- Has three tally lamps at the front of the camera, and one main tally lamp at the back.
- While maintaining balance, camera tilts 40 degrees up and down, and pans 90 degrees to right and left.

# Precautions

**Operation**

- Do not use the unit in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not use the viewfinder outside its operating temperature range of 0°C to +40°C (32°F to 104°F).
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Allow adequate air circulation to prevent internal heat build-up.
- Do not expose the unit to extremely high temperatures and humidity.

**Cleaning**

Clean the cabinet, panel and controls with a soft, dry cloth, or a soft cloth that has been lightly moistened with a mild detergent solution. Do not use any type of solvent, such as alcohol or benzine, as this may damage the finish.

**Repacking**

Do not discard the unit's original packaging. Use the packaging to afford maximum protection whenever the unit is transported.

If you have any questions about your viewfinder, contact your authorized Sony dealer.



## Location and Function of Parts and Controls

**6 CONTRAST control** [1]
Turn to adjust the contrast of the picture on the viewfinder screen.

**7 BRIGHT control** [1]
Turn to adjust the brightness of the picture on the viewfinder screen.

**8 Viewfinder fixing ring**
Fix the viewfinder to the camera.

**9 TALLY ON/OFF switch**
Enables and disables the external tally lamps 1 and 2.
ON: The external tally lamp turns on and off, as the camera mode changes.
OFF: The external tally lamp does not light, regardless of the camera mode.

**10 PEAKING ON/OFF switch**
Set this switch to on to use the PEAKING control.

**11 PEAKING control** [1]
Adjusts the outline intensity of the viewfinder image.

**12 SHUTTER/GAIN indicator**
Lights while the shutter, the gain control, or the AGC function is switched on.

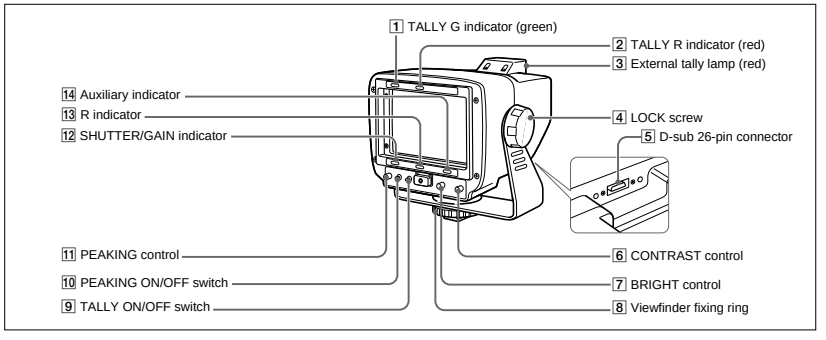
**13 R indicator**
Lights while the second tally is on in recording.

**14 Auxiliary indicator**
Signal warning indicator auxiliary lamp (excludes SHUTTER/GAIN).

1) These controls affect only the viewfinder screen. They have no effect on the signal being output by the camera.



# Location and Function of Parts and Controls




**1 TALLY G indicator (green)**
Lights while the camera is monitoring.

**2 TALLY R indicator (red)**
Lights while the camera is recording.

**3 External tally lamp (red)**
Lights while the camera recording when TALLY switch set to on.

**4 LOCK screw**
Adjusts the angle of viewfinder in the vertical direction.

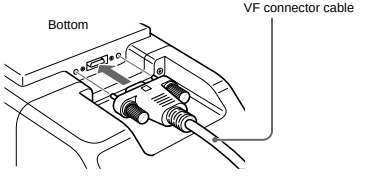
**5 D-sub 26-pin connector**
Connects 20-pin connector (supplied) to the VF (viewfinder) connector of the host camera. This connector carries the video signal, tally signal and power.



# How To Attach and Connect the Unit to the Camera

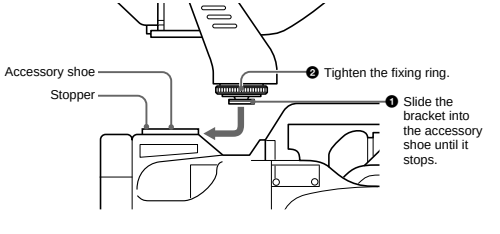
Turn off the power of the camera before attempting the installation.

**1** Connect the VF connector cable (supplied) to the bottom of the viewfinder.



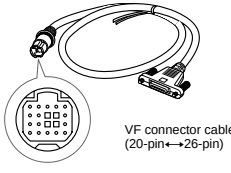

**2** Attach the viewfinder to the accessory shoe of the camera and fix it.

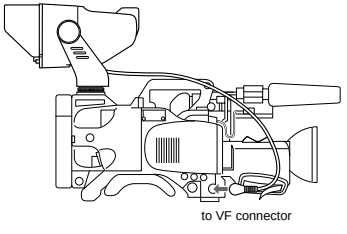
The viewfinder can also be attached with its screen facing the subject, if desired.



## How To Attach and Connect the Unit to the Camera

**3** Connect the 20-pin connector to the camera's VF connector.



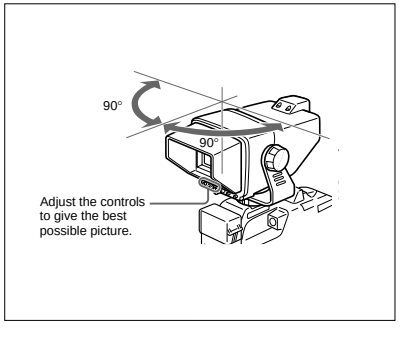



# Operation

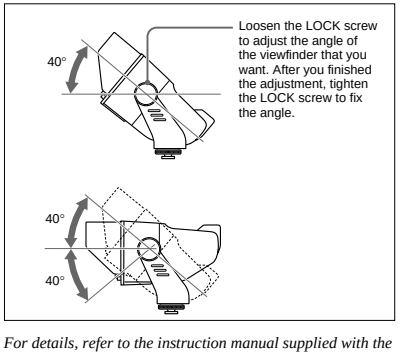
Turning on the camera or the camera control unit automatically supplies power to the viewfinder. The viewfinder image will appear within several seconds.

Adjust the viewfinder to the desired angle and height.

### Panning




### Tilting


Loosen the LOCK screw to adjust the angle of the viewfinder that you want. After you finished the adjustment, tighten the LOCK screw to fix the angle.
40°
40°
40°

**Note**

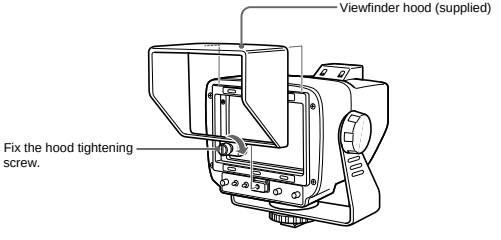
When the BRIGHT control is turned fully counterclockwise, no picture will appear on the viewfinder screen.

*For details, refer to the instruction manual supplied with the camera or the CCU.*



## How To Attach the Viewfinder Hood

When using the viewfinder outdoors, attach the supplied viewfinder hood to reduce glare.






# Specifications

| | |
|---|---|
| Picture tube | 5-inch monochrome<br>70-degree deflection |
| Video signal | EIA standard/CCIR standard |
| Scanning system | 2 : 1 interlace<br>525 lines<br>2 : 1 interlace<br>625 lines |
| Scan | 5 % underscan |
| High voltage | 8.5 kV |
| Horizontal resolution | More than 650 lines (at center) |
| Frequency response | 10 MHz at –3 dB |
| Connectors | Exclusive D-sub 26-pin connector<br>Video input: 1 V(p-p), sync negative, 3 kΩ<br>Power supply: 12 V DC |
| Power consumption | 11 W |
| Operating temperature | 0°C to +40°C (32°F to 104°F) |
| Dimensions | Approx. 203 × 199 × 289 mm (w/h/d) (8 × 7 7/8 × 11 1/2 inches) including viewfinder hood |
| Mass | Approx. 2.4 kg (4 lb 7 oz) including viewfinder hood |

Accessories supplied

Viewfinder hood (1)
VF connector cable (20-pin⟷26-pin) (1)
Number plate (1)
Operating Instructions (1)

Design and specifications are subject to change without notice.

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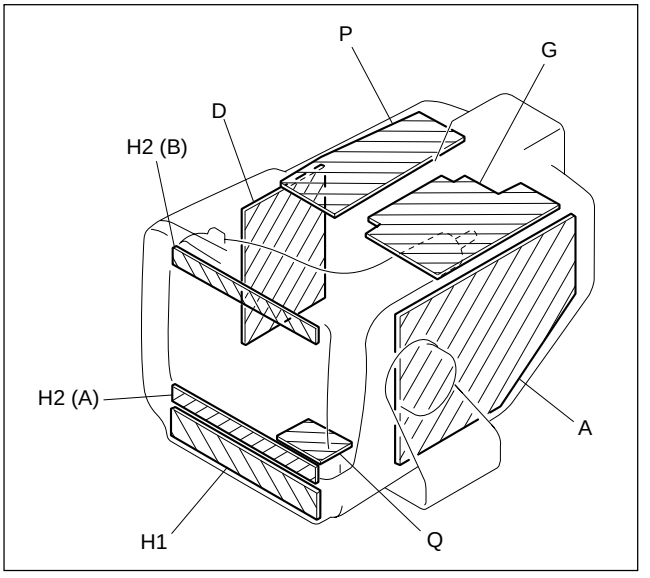
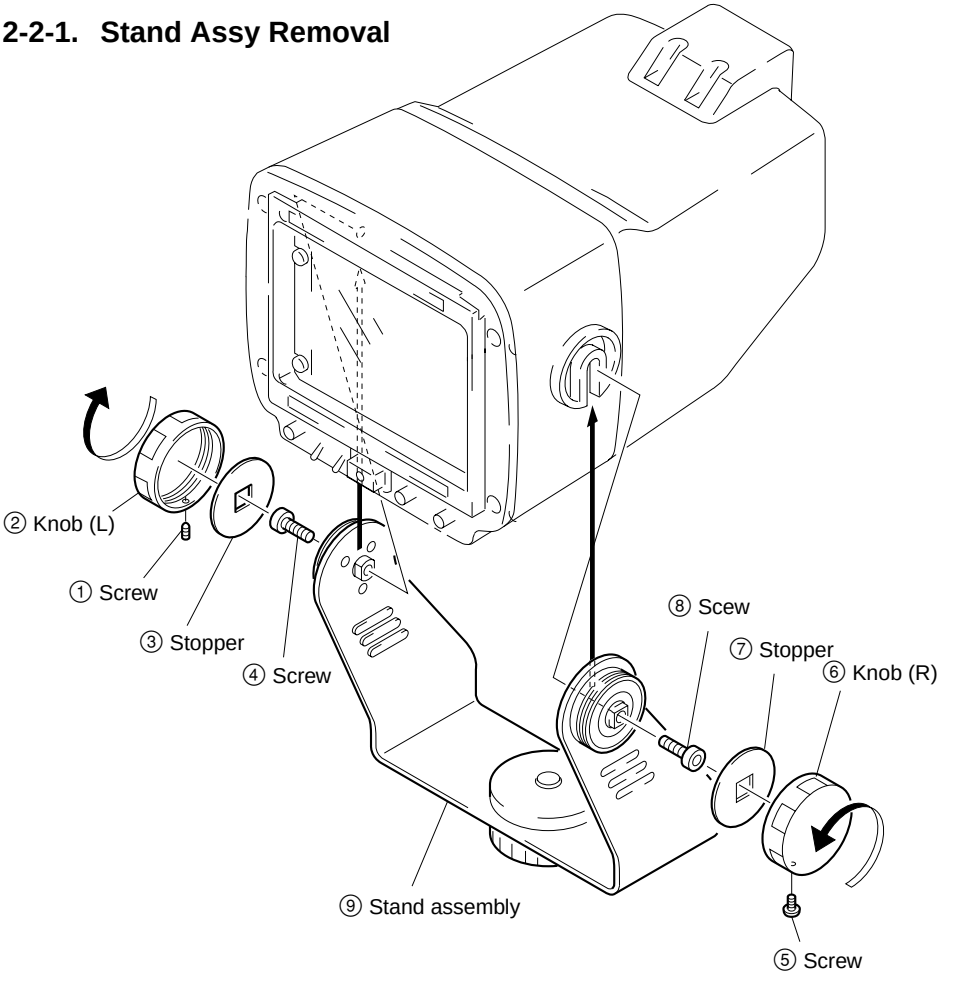
# Section 2
# Service Informations

## 2-1. Board Layout

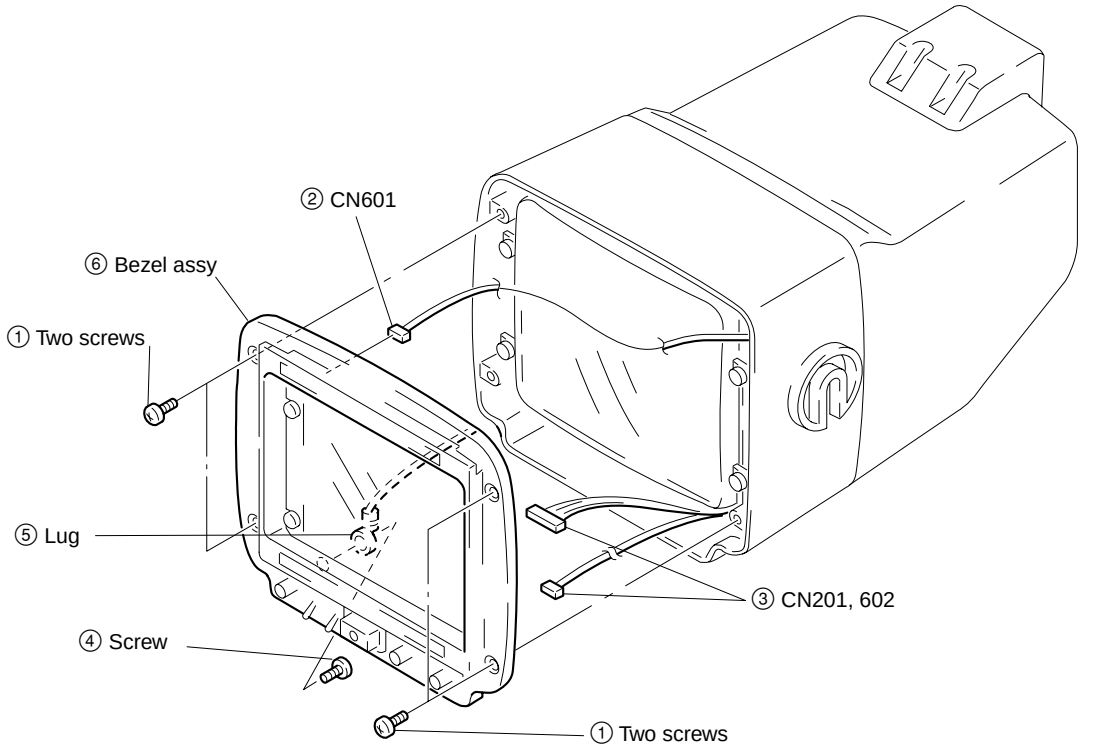



## 2-2. Disassembly

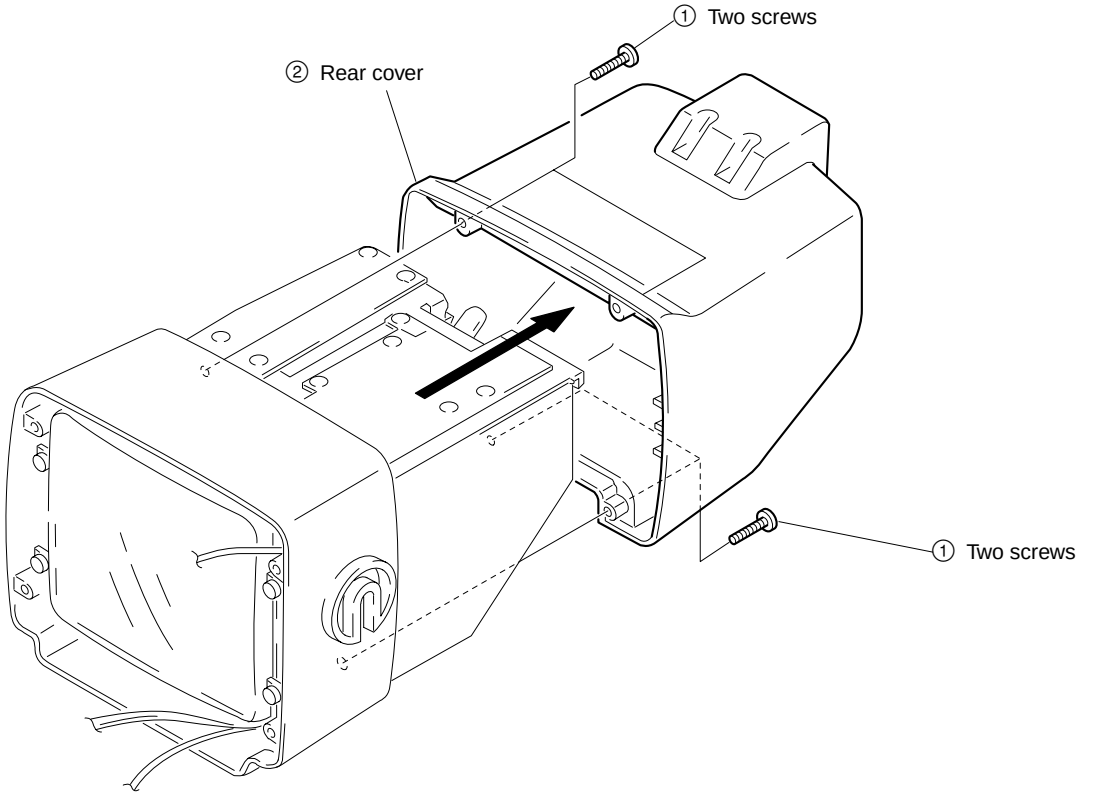
### 2-2-1. Stand Assy Removal



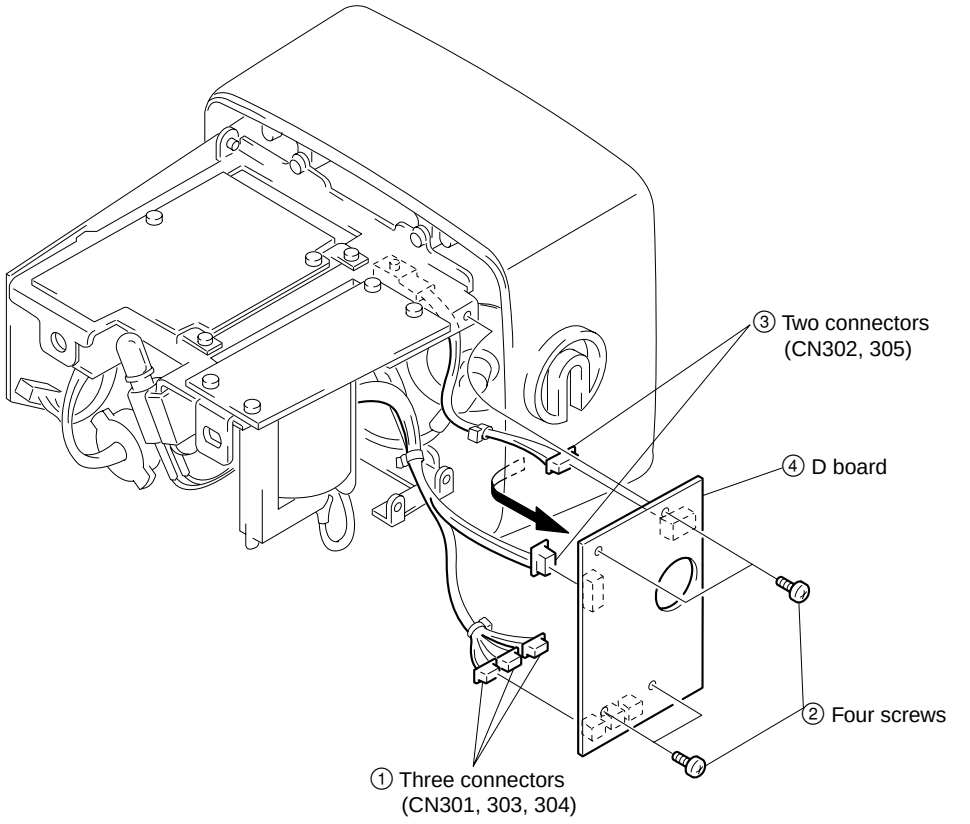
## 2-2-2. Bezel Assy Removal



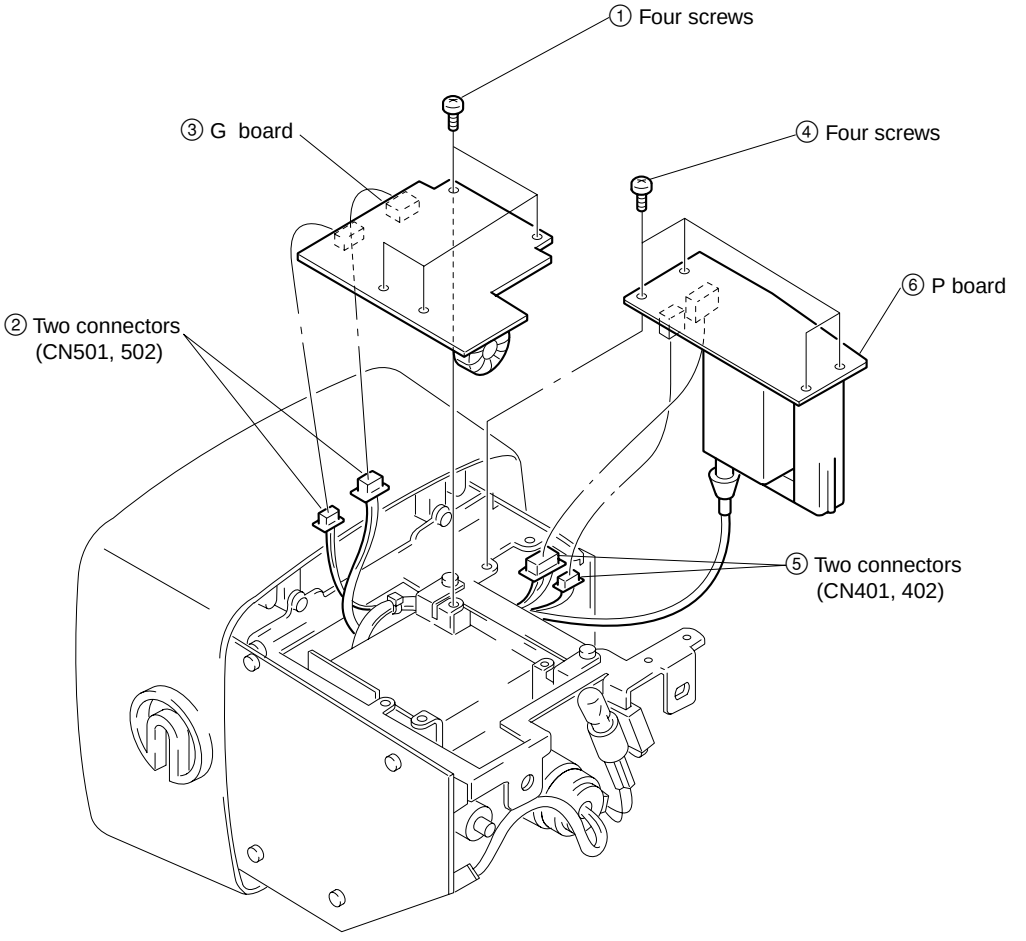

## 2-2-3. Back Cover Removal



## 2-2-4. D Board Removal



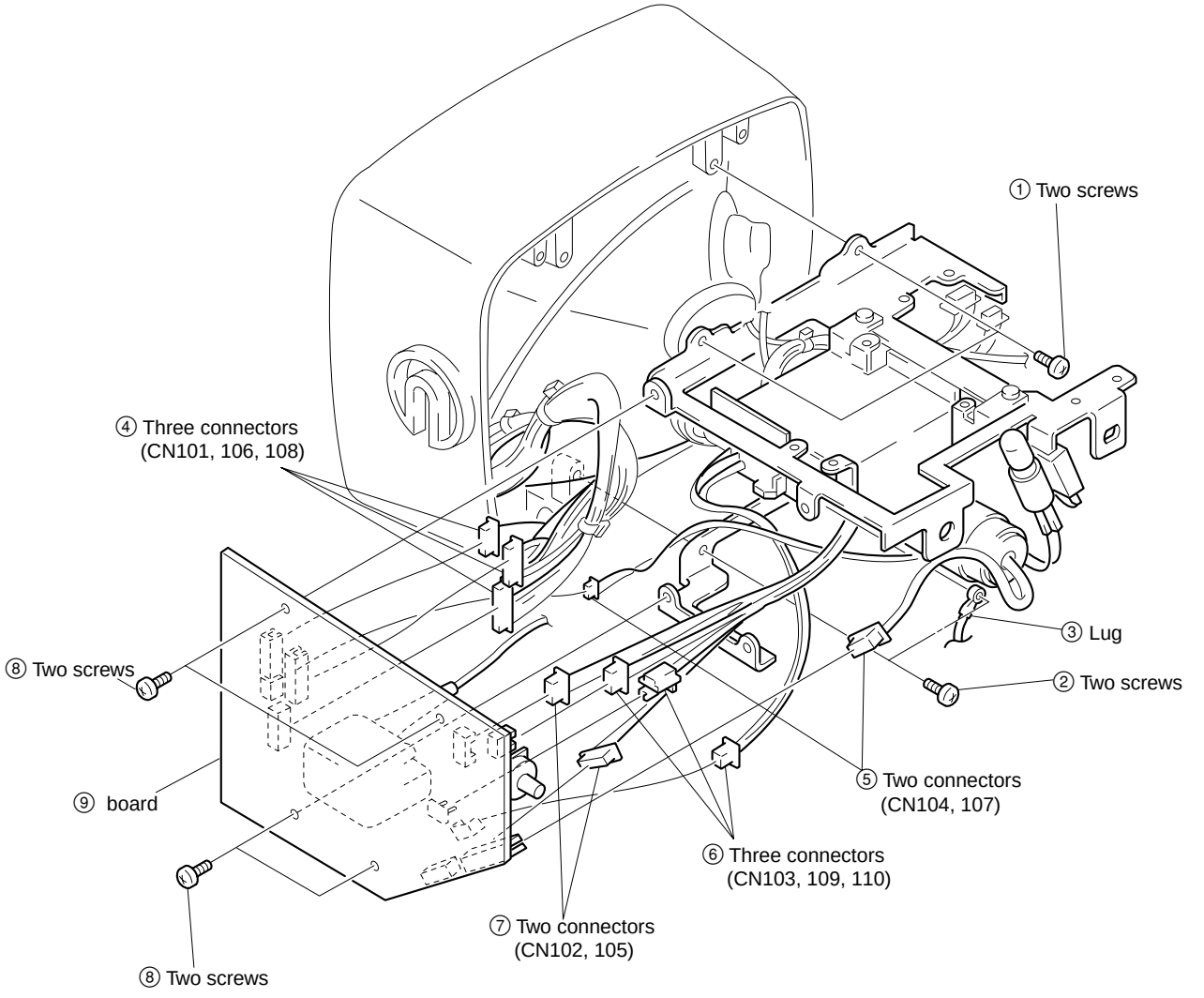
## 2-2-5. G and P Boards Removal



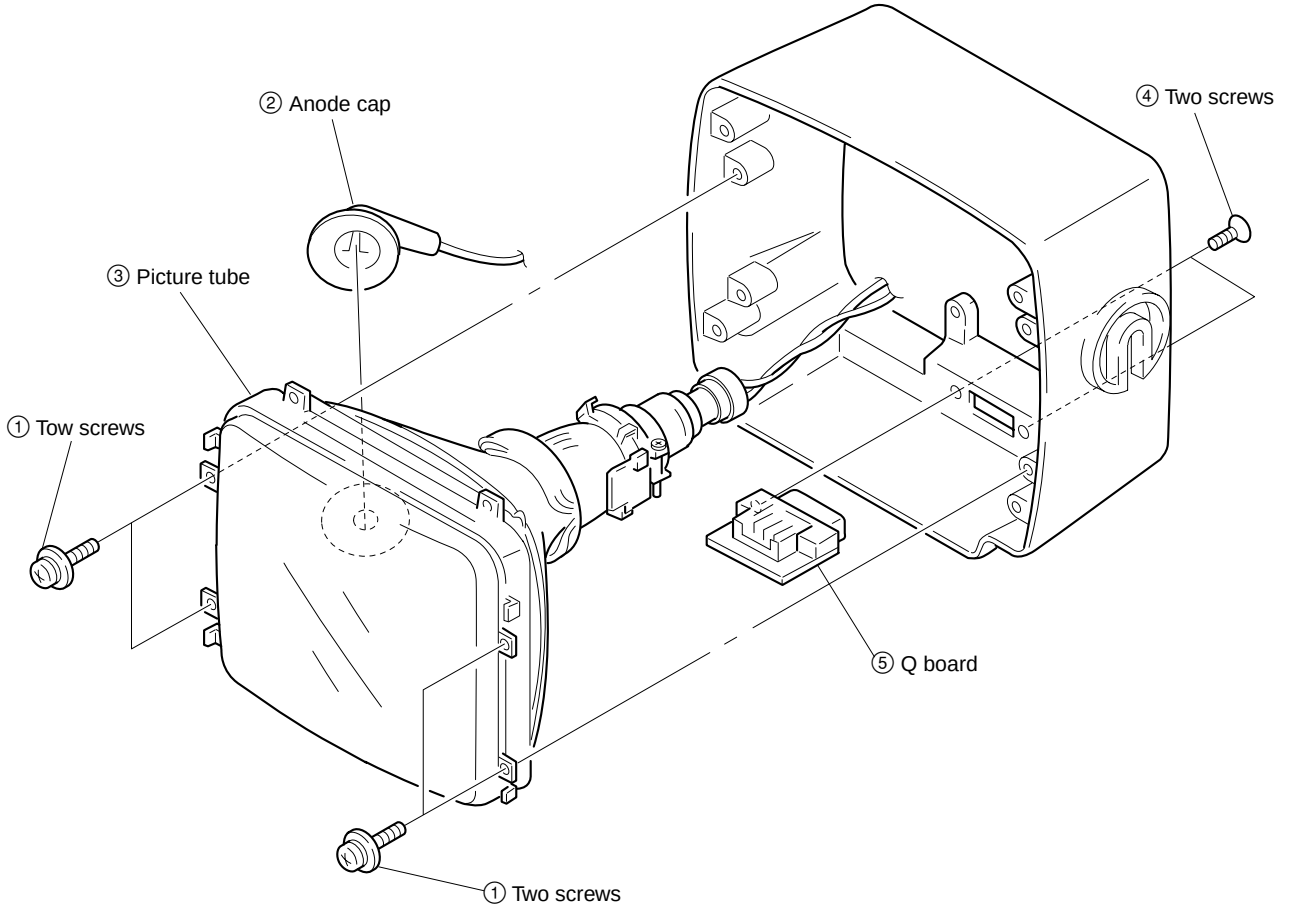
## 2-2-6. A Board Removal

**Note**

When the A board is going to be replaced in the monitor that have the serial No. 10001-30000 (UC), 40001-100000 (AEP) as shown, replace the A board together with the P board at the same time.



## 2-2-7. Picture Tube and Q Board Removal

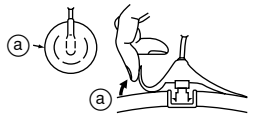



## 2-2-8 Removal of Anode Cap

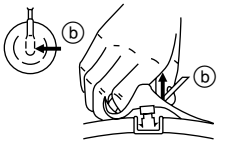
**Note**

Short-circuit the anode of the picture tube and the anode cap to the metal chassis, picture tube shield or carbon painted on the picture tube, after removing the anode.

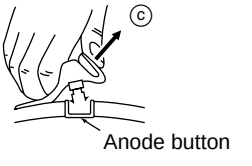
- **Removal Procedure**




(1) Turn up one side of the rubber cap in the direction indicated by arrow ⓐ.



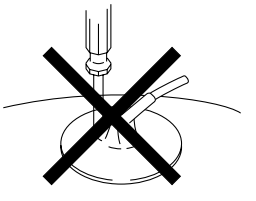

(2) Using a thumb, pull up the rubber cap firmly in the direction indicated by arrow ⓑ.

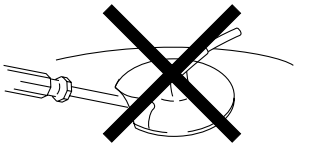



(3) When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

- **Handling Precautions**

(1) Do not scratch the surface of anode cap with a sharp object.
(2) Do not press the rubber so hard that it damages the inside of anode caps. A shatter-hook terminal is built into the rubber.
(3) Do not turn the foot of the rubber over.
The shatter-hook terminal will stick out or damage the rubber.





# Section 3
# Safety Related Adjustment

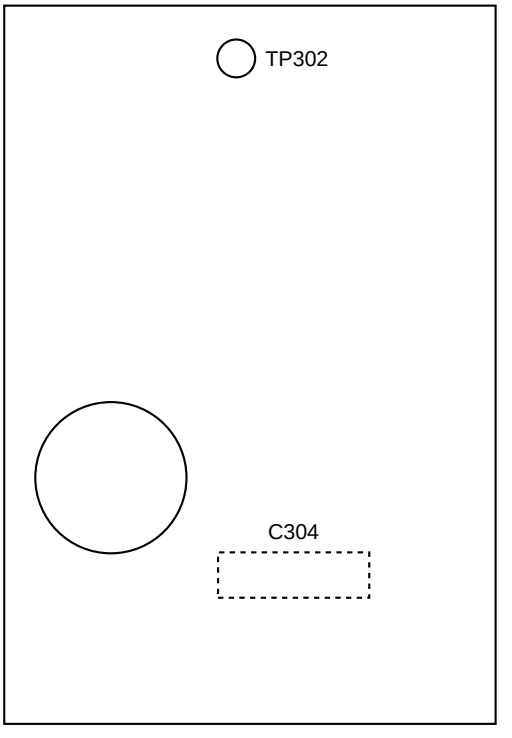
## H.V. Regulation Confirmation

This confirmation must be made whenever the following parts (with ◪ marking in circuit diagram) were replaced.
FBT301, R311, R312, R401, RV302

1. Open C304 on the D board.
2. Enter full white signal to pin ⑥ (VF VIDEO (X)) of D-sub 26-pin connector (CN702).
3. Connect a high voltage meter to the HV pin of FBT301 on the P board.
4. Confirm that the voltage is below DC15 kV when both BRIGHT and CONTRAST are set to the minimum position.
5. Confirm that the voltage is below DC13.5 kV when both BRIGHT and CONTRAST are set to the maximum position.
6. Connect the C304 removed in step1.

## +B Confirmation

1. Connect a digital voltmeter to the TP302.
2. Confirm that the voltage is DC9.5 ± 0.1 V.
   If out of the range, perform the switching power output adjustment (Section 4).




**D board (Conductor side)**

# Section 4
# Electrical Adjustments

## 4-1. Preparation

Make adjustment under the following conditions, unless otherwise specified:

- BRIGHT : Mechanical center
- CONTRAST : Marker points “3 o’clock” position
- PEAKING switch : OFF
- Input signal : Enter NTSC monoscope signal to pin ⑥ of D-sub 26-pin connector (CN702)

## 4-2. Switching Power Output (RV501) Adjustment

**Note**

All items of electrical adjustment must be checked, if this adjustment was made.

1. Connect a digital voltmeter to TP103.
2. Rotating RV501, adjust the power to DC9.5 ±0.1 V.

## 4-3. H.V. (RV302) High Voltage Adjustment

**Note**

The H-SIZE, V-SIZE, and Heater Voltage must be checked, if this adjustment was made.

1. Connect a high voltage meter too the HV pin of FBT301 on the P board.
2. Adjust RV302 to attain DC8 kV.

## 4-4. H-HOLD (RV104) Adjustment

Preparation : No signal input.

1. Connect a frequency counter to TP111.
2. Adjust RV104 to attain 15.734 ±0.1 kHz.

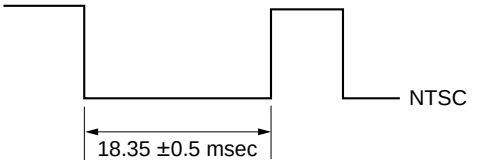
## 4-5. V-HOLD (RV103) Adjustment

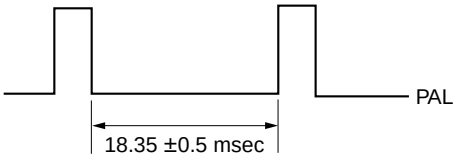
Preparation : No signal input.

1. Connect a frequency counter to TP112.
2. Adjust RV103 to attain 42 ±1Hz.

## 4-6. V-DUTY (RV107) Adjustment

1. Enter PAL signal or NTSC signal to pin ⑥ of a D-sub 26-pin connector (CN702).
2. Connect an oscilloscope to TP114 and observe a waveform.
3. Adjust RV107 as follows.




## 4-7. H-LEN (L302) Adjustment

1. Adjust L302 so as to attain the best linearity (horizontal direction) of screen.

## 4-8. H-SIZE (RV301) Adjustment

**Note**

The Heater voltage must be checked, if this adjustment was made.

1. Adjust RV301 so that horizontal amplitude of screen becomes 98 ±2 mm.

## 4-9. Heater Voltage Adjustment

1. Connect a digital voltmeter to TP118.
2. Confirm that the voltage is DC11.7 ±0.3 V.
3. If exceeding this specification. Break the solder of JP301 and JP302 in this order.

## 4-10. V-LIN (RV105) Adjustment

1. Adjust RV105 so as to attain the best linearity (vertical direction) of screen.

## 4-11. V-SIZE (RV109) Adjustment

**Note**

The V-SIZE (16 : 9) and V-SIZE (PAL) must be checked, if this adjustment was made.

1. Adjust RV109 so that vertical amplitude of screen becomes 73.5 ± 1.5 mm.

## 4-12. 16 : 9 V-SIZE (RV108) Adjustment

1. Enter 16 : 9 switching signal.
2. Adjust RV108 so that vertical amplitude of screen becomes 55 ± 1.5 mm.

## 4-13. V-SIZE PAL (RV110) Adjustment

1. Enter PAL signal to pin ⑥ of D-sub 26-pin connector (CN702).
2. Adjust RV110 so that vertical amplitude of screen becomes 73 ± 1.5 mm.

## 4-14. BRIGHT (RV102) Adjustment

1. Set both BRIGHT and CONTRAST to “9 o’clock” position respectively.
2. Adjust RV102 so as to attain the brightness on same level as black-out.

## 4-15. FOCUS (RV111) Adjustment

1. Adjust RV111 so as to attain the best focus of screen. (Specification : Center resolution 650 TV or more)

## 4-16. Deflecting Yoke Tilt Adjustment

**Note**

Do not adjust this, except when CRT is replaced.

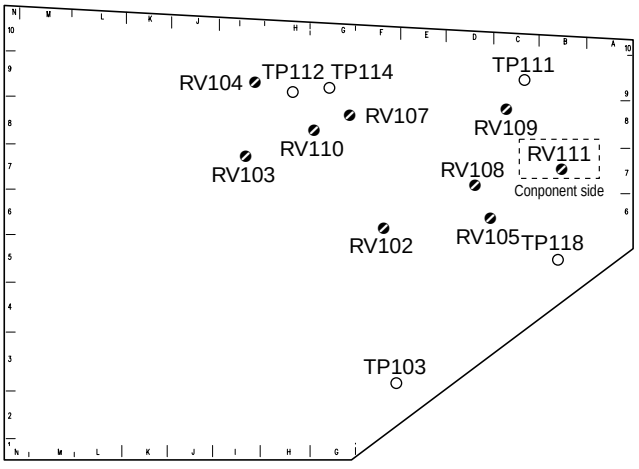
1. If an image tilts to the screen, loosen a clamp band screw and rotate the deflecting yoke to eliminate a tilt.
2. Tighten gently the clamp band screw, and apply locking paint to the clamp band screw.
   Specification : H within ± 0.65°
   V within ± 0.92°

## 4-17. Centering Adjustment

1. Rotating two centering magnets attaching to the deflecting yoke, adjust so that the image comes to the center of screen.
   Then, apply locking paint to the centering magnets.

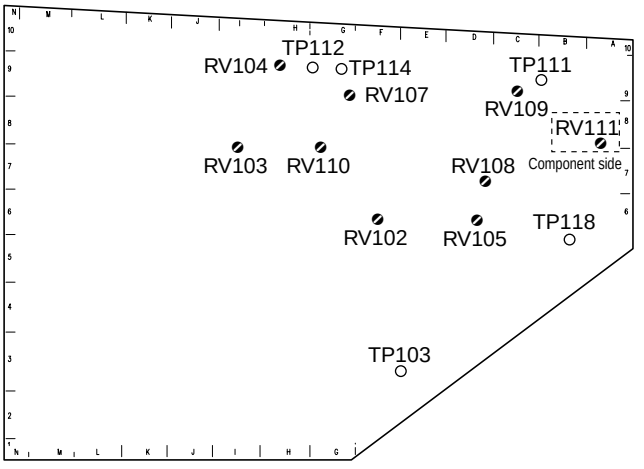
   Specification : H Difference in frames between left and right within 0.13 frame.
   V Difference in frames between top and bottom within 0.13 frame.

**Serial No. 10001 – (UC)**
**Serial No. 30001 – (J)**
**Serial No. 40001 – (AEP)**

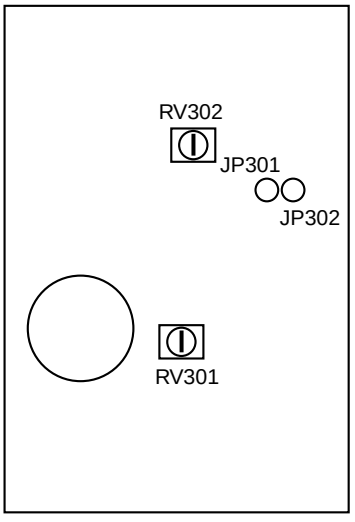



**A board (Conductor side)**

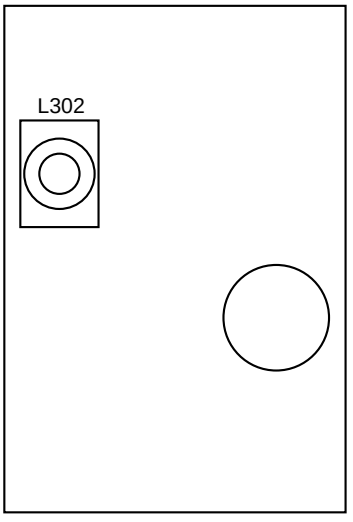
**Serial No. 100001 – (UC, J)**
**Serial No. 400001 – (CE)**



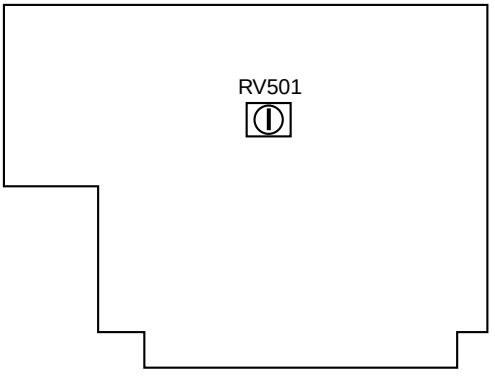

**A board (Conductor side)**




**D board (Conductor side)**



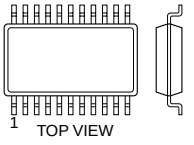

**D board (Component side)**




**G board (Conductor side)**

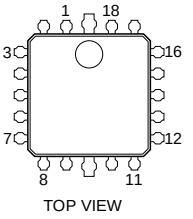
# Section 5
# Semiconductors

**BA15218F-E2**
**TC4W66F(TE12R)**
**TC7W04F**
**TC7W08F**
**TC7W08F(TE12R)**
**UPC4062G2**
**UPC842G2-E2**

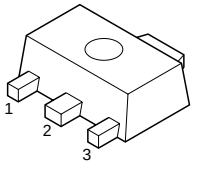



**8pin SOP**

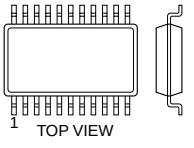
**HA11423MP**




**M5237ML-TP1**

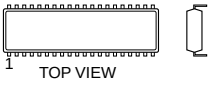



**MC74HC4538AF**
**TC4538BF**
**TC74HC595AF(EL)**
**UPC494GS**
**UPC494GS-T1**



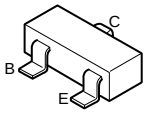

**16pin SOP**

**TC74HC126AF(EL)**

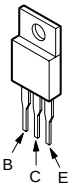



**14pin DIP**

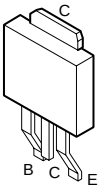
**2SA1576A-T106-Q**
**2SA1576A-T106-R**
**2SC3722K-R**
**2SC4081T106R**
**2SC4178-F14**
**2SC4178-T1F14**
**2SD1328-RST-TX**



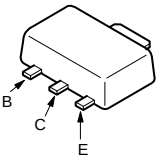

**2SB1548**
**2SD2374**



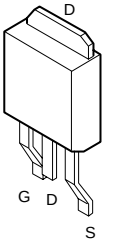

**2SC3518-ZL-E2**
**2SC3518L**



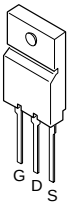

**2SC4080**



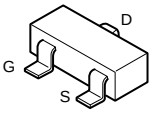

**2SJ246S-TL**



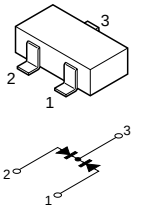

**2SK2012**



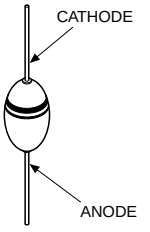

**2SK664**
**2SK664-TX**



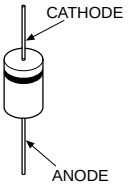

**1SS184**
**MA152WK-TX**



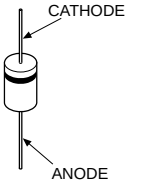

**DSA3A2**



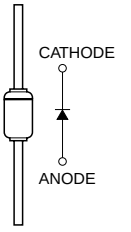

**ERA22-06TP1**
**ERA22-08**
**RD2.0SB-T1**



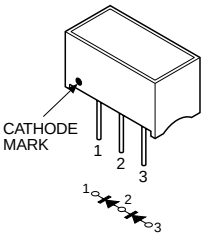

**ERC25-04S**
**ERC81-004**



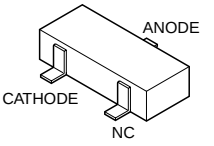

**ESJA57-04AT**



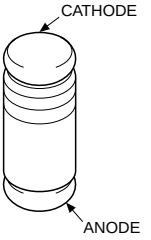

**LD-001DU**
**LD-001VR**



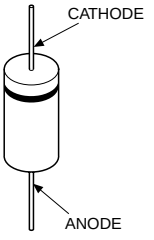

**MA143A-(TX).SO**



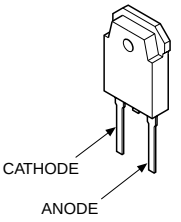

**RLS245TE-11**




**RU3AM**




**YG911S2R**



# Section 6
# Spare Parts

## 6-1. Notes on Repair Parts

### 1. Safety Related Components Warning

**WARNING**

Components marked ⚠ are critical to safe operation. Therefore, specified parts should be used in the case of replacement.

**WARNHINWEIS**

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

### 2. Standardization of Parts

Some repair parts supplied by Sony differ from those used for the unit. These are because of parts commonality and improvement.
Parts List has the present standardized repair parts.

### 3. Stock of Parts

Parts marked with "o" at SP (Supply Code) column of the Spare Parts list may not be stocked. Therefore, the delivery date will be delayed.
Items with no part number and no description are not stocked because they are seldom required for routine service.

### 4. Units for Capacitors, Inductors and Resistors

The following units are assumed in Schematic Diagrams, Electrical Parts List and Exploded Views unless otherwise specified.

| | |
|---|---|
| Capacitors | : μF |
| Inductors | : μH |
| Resistors | : Ω |

### 5. X-ray Radiation Safety Related Parts

The components marked ⋈ in this Spare Parts List have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.

## 6-1. 補修部品注意事項

### 1. 安全重要部品

⚠警告

⚠印のついた部品は安全性を維持するために重要な部品です。したがって，交換する時は必ず指定の部品を使ってください。

### 2. 部品の共通化

ソニーから供給する補修用部品は，セットに使われているものと異なることがあります。
これは部品の共通化，改良等によるものです。
部品表には現時点での共通化された補修用部品が記載されています。

### 3. 部品の在庫

部品表のSP (Supply code) 欄に"o"で示される部品は在庫していないことがあり，納期が長くなることがあります。
分解図中の構成部品で，Ref. No.のない部品は供給しません。

### 4. コンデンサ，インダクタ，抵抗の単位

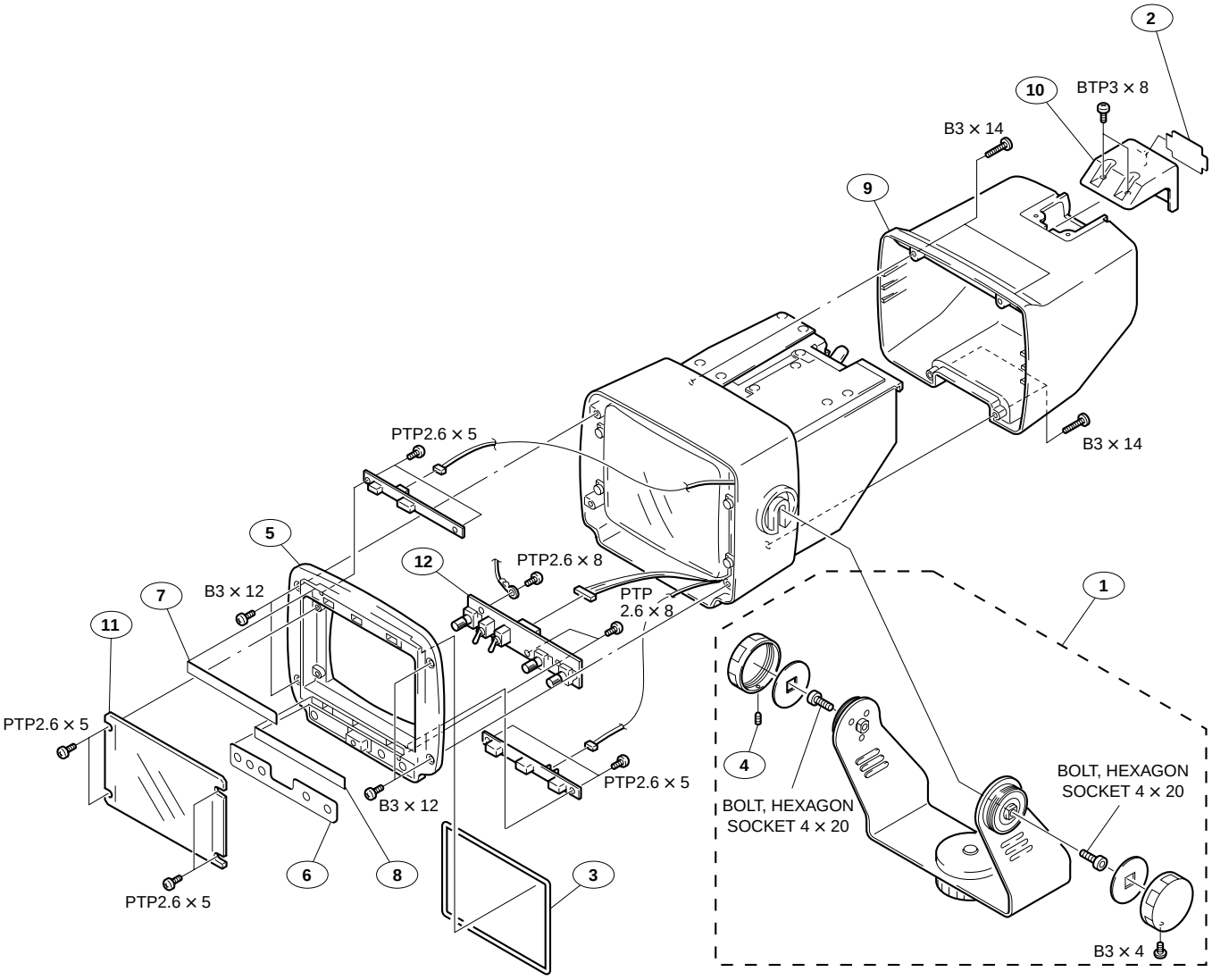
回路図，分解図，電気部品表中，特に明記したものを除き，下記の単位は省略されています。

| | |
|---|---|
| コンデンサ | : μF |
| インダクタ | : μH |
| 抵抗 | : Ω |

### 5. X線関連部品

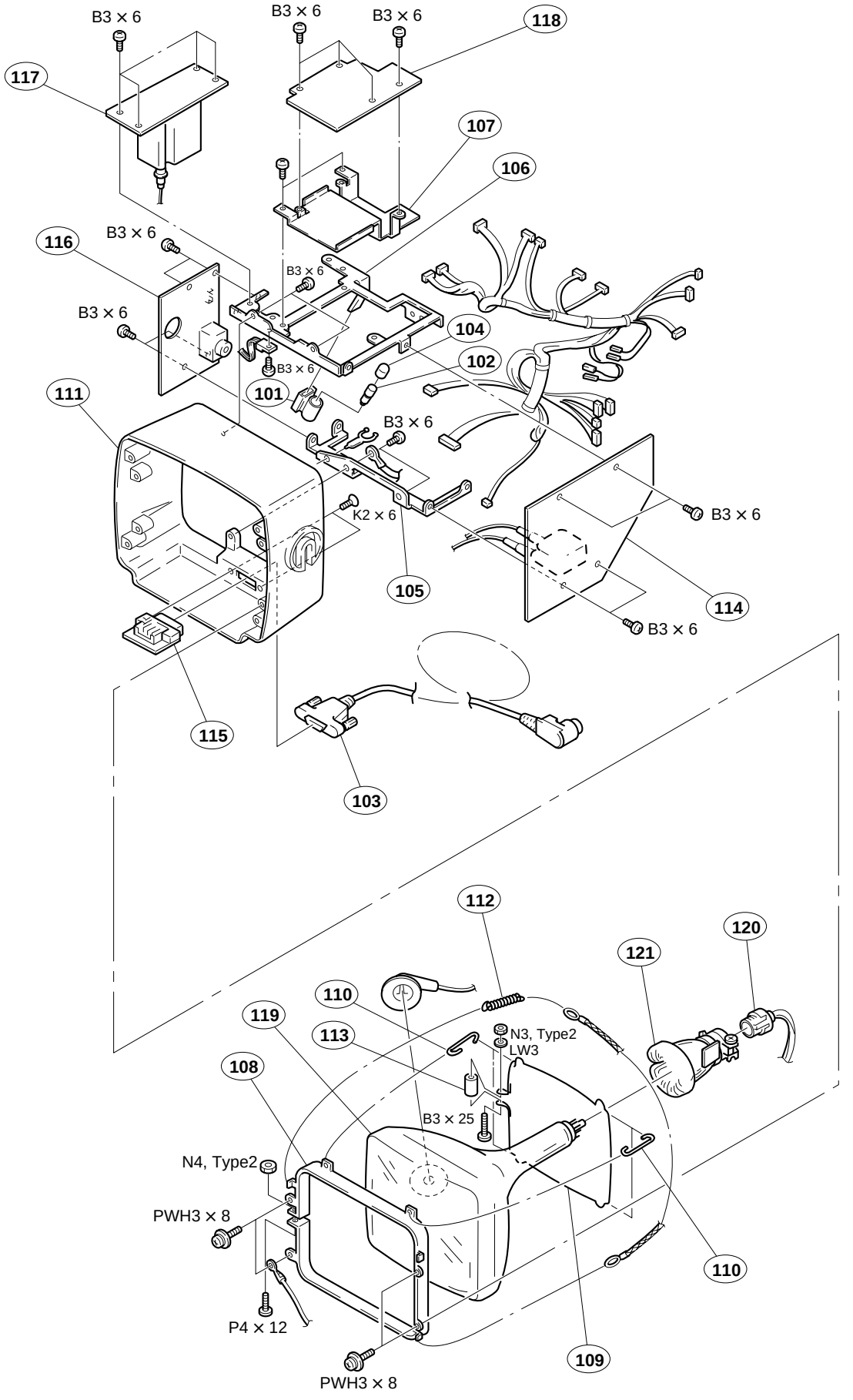
⋈ 印の部品の定数は，X線規制の規格を満足させる為，製造時セット毎に確認し決定したものです。
この部品を交換する場合は，セットに付いている部品と同一のものをご使用ください。

## 6-2. Exploded Views



| No. | Part No. | SP | Description |
|---|---|---|---|
| 1 | X-3705-096-1 | o | STAND ASSY |
| 2 | 3-167-517-01 | s | PLATE, NUNBER |
| 3 | 3-617-628-01 | o | CRT CUSHION |
| 4 | 3-701-506-01 | s | SET-SCREW HEX M3.4X4(WP) |
| 5 | 3-709-224-01 | s | BEAEL |
| 6 | 3-709-225-01 | o | NAME PLATE, SWITCH |
| 7 | 3-709-226-01 | o | MASK(UPPER), LED |
| 8 | 3-709-227-01 | o | MASK(LOWER), LED |
| 9 | 3-709-228-01 | o | COVER, REAR |
| 10 | 3-709-229-01 | o | COVER, LAMP |
| 11 | 3-709-250-01 | o | MASK, CRT |
| 12 | 9-939-875-02 | o | MOUNTED CIRCUIT BOARD, H1 |
| Screws/Washers | | | |
| | 7-682-545-09 | s | SCREW +B 3X4 |
| | 7-682-550-09 | s | SCREW +B 3X12 |
| | 7-682-551-09 | s | SCREW +B 3X14 |
| | 7-683-425-04 | s | BOLT, HEXAGON SOCKET 4X20 |
| | 7-685-132-19 | s | SCREW +PTP 2.6X5 |
| | 7-685-134-19 | s | SCREW +PTP 2.6X8 |
| | 7-685-546-14 | s | SCREW +BTP 3X8 |

## Chassis & CRT Assemblies



Note
※1 Serial No. 10001-(UC)
Serial No. 30001-(J)
Serial No. 40001-(AEP)
※2 Serial No. 100001-(UC, J)
Serial No. 400001-(CE)

Serial No. ※1に該当するセットでA基板を交換する
場合は、P基板と共に交換してください。
When the A board is going to be replaced in the monitor
that have the serial No. ※1 as shown, replace the A
board together with the P board at the same time.

| No. | Part No. | SP | Description |
|---|---|---|---|
| 101 | 1-517-075-00 | s | SOCKET, LAMP |
| 102 | 1-518-411-21 | s | LAMP |
| 103 | 1-782-353-11 | s | CABLE B,VF(20P-26P) |
| 104 | 3-173-323-01 | s | CAP, TALLY LAMP |
| 105 | 3-709-231-01 | o | FRAME, BOARD(LOWER) |
| 106 | 3-709-232-01 | o | FRAME, BOARD(UPPER) |
| 107 | 3-709-233-01 | o | FRAME, POWER |
| 108 | 3-709-234-01 | o | BAND, CRT |
| 109 | 3-709-235-01 | o | RING, CRT RETAINING |
| 110 | 3-709-236-01 | o | HOOK |
| 111 | 3-709-237-01 | o | CHASSIS, MAIN |
| 112 | 3-709-238-01 | s | SPRING |
| 113 | 4-855-006-11 | s | SLEEVE, L14 |
| 114 ※1 | 9-939-870-02 | o | MOUNTED CIRCUIT BOARD, A |
| 115 | 9-939-878-02 | o | MOUNTED CIRCUIT BOARD, Q |
| 116 | 9-939-887-02 | o | MOUNTED CIRCUIT BOARD, D |
| 117 ※1 | 9-939-889-02 | o | MOUNTED CIRCUIT BOARD, P (INCLUDING FBT) |
| 118 | 9-939-894-02 | o | MOUNTED CIRCUIT BOARD, G |
| 119 ⚠ | 9-939-895-01 | s | CRT (C-5D01B45) |
| 120 | 9-939-896-01 | s | CRT SOCKET |
| 121 ⚠ | 9-939-897-01 | s | DY(DDY-B5126) |

Screws/Washers

| | | | |
|---|---|---|---|
| | 7-621-555-40 | s | SCREW +K 2X6 |
| | 7-623-422-07 | s | WASHER, LW3 (TYPE3) |
| | 7-682-154-01 | s | SCREW +B 3X25 |
| | 7-682-163-01 | s | SCREW +P 4X12 |
| | 7-682-547-04 | s | SCREW +B 3X6 |
| | 7-682-903-21 | s | SCREW +PWH 3X8 |
| | 7-684-023-04 | s | NUT, M3 TYPE2 |
| | 7-684-024-04 | s | NUT, M4 TYPE2 |

## 6-3. Electrical Parts List

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A BOARD
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Note:
∗1 Serial No. 10001- (UC)
Serial No. 30001- (J)
Serial No. 40001- (AEP)
∗2 Serial No. 100001- (UC, J)
Serial No. 400001- (CE)

Serial No. ∗1に該当するセットでA基板を交換する場合は、P基板と共に交換してください。
When the A board is going to be replaced in the monitor that have the serial No. ∗1 as shown, replace the A board together with the P board at the same time.

(A BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 9-939-870-02 | o | MOUNTED CIRCUIT BOARD, A |
| 1pc | 1-533-223-11 | s | CLIP,FUSE |
| C101 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C102 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C103 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C104 | 1-104-823-11 | s | CAPACITOR,TANTALUM 47MF/16V |
| C105 | 1-104-823-11 | s | CAPACITOR,TANTALUM 47MF/16V |
| C106 | 1-163-105-00 | s | CAPACITOR,CHIP CERAMIC 33PF/50 |
| C107 | 1-163-113-00 | s | CAPACITOR,CHIP CERAMIC 68PF/50 |
| C108 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C109 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C110 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C111 | 1-163-125-00 | s | CAPACITOR,CERAMIC 220PF/50V SL |
| C112 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C113 | 1-163-117-00 | s | CAPACITOR,CHIP CERAMIC 100PF |
| C114 | 1-163-832-00 | s | CAPACITOR,CERAMIC 0.1MF/100V |
| C115 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C117 | 9-885-015-33 | s | CAPACITOR,ELECT 1000U/16V |
| C118 | 1-128-578-11 | s | CAPACITOR,ELECT 1MF/100V |
| C119 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C120 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C121 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C122 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C123 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C124 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C125 | 1-104-823-11 | s | CAPACITOR,TANTALUM 47MF/16V |
| C126 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C127 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C129 | 1-130-734-00 | s | CAPACITOR,FILM 0.0068MF/100V |
| C130 | 9-939-858-01 | s | CAPACITOR, ELECT 100UF/16V |
| C131 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C132 | 1-107-689-21 | s | CAPACITOR,TANTALUM 1MF/35V |
| C133 | 1-130-994-11 | s | CAPACITOR,ELECT 0.033MF/50V PP |
| C134 | 1-126-393-11 | s | CAPACITOR,ELECT 33MF/10V(CHIP) |
| C135 | 9-939-858-01 | s | CAPACITOR, ELECT 100UF/16V |
| C136 | 1-137-459-11 | s | CAPACITOR,FILM 0.0056MF/100V |
| C137 | 1-130-734-00 | s | CAPACITOR,FILM 0.0068MF/100V |
| C138 | 1-107-689-21 | s | CAPACITOR,TANTALUM 1MF/35V |
| C139 | 1-107-689-21 | s | CAPACITOR,TANTALUM 1MF/35V |
| C140 | 1-163-145-00 | s | CAPACITOR,CHIP CERAMIC 1500PF |
| C141 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C142 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C143 | 1-163-127-00 | s | CAPACITOR,CHIP CERAMIC 270PF |
| C144 | 1-107-689-21 | s | CAPACITOR,TANTALUM 1MF/35V |
| C145 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C146 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C147 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C148 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C149 | 9-939-858-01 | s | CAPACITOR, ELECT 100UF/16V |
| C150 | 9-885-015-33 | s | CAPACITOR,ELECT 1000U/16V |
| C151 | 1-163-127-00 | s | CAPACITOR,CHIP CERAMIC 270PF |
| C152 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C153 | 1-163-145-00 | s | CAPACITOR,CHIP CERAMIC 1500PF |
| C154 | 1-136-165-00 | s | CAPACITOR,FILM 0.1MF/50V (PP) |
| C155 | 1-163-125-00 | s | CAPACITOR,CERAMIC 220PF/50V SL |
| C156 | 1-104-919-11 | s | CAPACITOR,TANTALUM 10MF/25V |
| C157 | 1-163-117-00 | s | CAPACITOR,CHIP CERAMIC 100PF |
| C158 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C159 | 1-130-338-11 | s | 0APACITOR FILM 0.01MF/630V(PP) |
| C160 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| CN101 | 1-695-904-11 | o | PIN, CONNECTOR (PC BOARD) 20P |
| CN102 | 1-564-705-11 | o | PIN,CONNECTOR (3P) |
| CN103 | 1-506-944-11 | o | PIN,CONNECTOR 2P |
| CN104 | 1-506-611-11 | o | PIN,CONNECTOR 8P |
| CN105 | 1-564-706-11 | s | PIN,CONNECTOR (4P) |
| CN106 | 1-580-716-11 | o | PIN, CONNECTOR (PC BOARD) 13P |
| CN107 | 1-566-757-11 | s | PIN, CONNECTOR (PC BOARD) 2P |
| CN108 | 1-566-763-11 | o | PIN,CONNECTOR (PC BOARD) 8P |
| CN109 | 1-564-505-11 | s | PLUG,CONNECTOR (2P) |
| CN110 | 1-560-060-00 | s | PIN,CONNECTOR 2P |
| D101 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| D103 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| D104 | 8-719-052-18 | s | DIODE RLS245TE-11 |
| D105 | 8-719-052-18 | s | DIODE RLS245TE-11 |
| D106 | 8-719-070-38 | s | DIODE ESJA57-04AT |
| D108 | 8-719-801-78 | s | DIODE 1SS184 |
| D109 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| D110 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| D111 | 8-719-801-78 | s | DIODE 1SS184 |
| D112 | 8-719-052-18 | s | DIODE RLS245TE-11 |
| DL101 | 1-406-729-21 | s | DELAY LINE,LC (120NS) |
| F101 | ⚠ 1-532-825-11 | s | FUSE,GLASS 2A/250V (20MM) |
| IC102 | 8-759-366-35 | s | IC TC4W66F (TE12R) |
| IC103 | 8-759-142-20 | s | IC UPC4062G2 |
| IC104 | 8-759-237-79 | s | IC TC74HC595AF (EL) |
| IC105 | 8-759-242-76 | s | IC TC7W08F |
| IC106 | 8-759-242-74 | s | IC TC7W04F |
| IC107 | 8-759-235-91 | s | IC TC74HC126AF (EL) |
| IC108 | 8-759-300-28 | s | IC HA11423MP |
| IC109 ∗1 | 8-759-524-55 | s | IC TC4538BF |
| IC109 ∗2 | 8-759-038-15 | s | IC MC74HC4538AF |
| IC110 | 8-759-242-74 | s | IC TC7W04F |
| IC111 | 8-759-242-74 | s | IC TC7W04F |
| IC112 | 8-759-242-74 | s | IC TC7W04F |
| IC113 | 8-759-237-79 | s | IC TC74HC595AF (EL) |
| L101 | 9-939-863-01 | s | INDUCTOR, CHIP 82UH |
| Q101 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q102 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q103 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q104 | 8-729-036-38 | s | TRANSISTOR 2SC4080 |
| Q105 | 8-729-036-38 | s | TRANSISTOR 2SC4080 |

(A BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| Q106 | 8-729-117-73 | s | TRANSISTOR 2SC4178-F14 |
| Q107 | 8-729-117-73 | s | TRANSISTOR 2SC4178-F14 |
| Q108 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q109 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q110 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q111 | 8-729-036-38 | s | TRANSISTOR 2SC4080 |
| Q113 | 8-729-924-97 | s | TRANSISTOR 2SC3722K-R |
| Q115 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q116 | 8-729-105-19 | s | TRANSISTOR 2SC3518L |
| Q117 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q118 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q120 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q121 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q122 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q123 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q124 | 9-939-864-01 | s | TRANSISTOR 2SD2374 |
| Q125 | 9-939-865-01 | s | TRANSISTOR 2SB1548 |
| Q126 | 8-729-420-75 | s | TRANSISTOR 2SD1328-RST-TX |
| Q127 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q128 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q129 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q130 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q131 | 8-729-422-12 | s | FET 2SK664 |
| Q132 | 8-729-026-52 | s | TRANSISTOR 2SA1576A-T106-R |
| Q133 | 8-729-026-52 | s | TRANSISTOR 2SA1576A-T106-R |
| Q134 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q135 | 8-729-036-38 | s | TRANSISTOR 2SC4080 |
| R101 | 1-216-069-11 | s | RESISTOR,CHIP 6.8K 1/10W(2012) |
| R102 | 1-216-033-00 | s | RESISTOR,CHIP 220 1/10W(2012) |
| R103 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R104 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R105 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R106 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R107 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R108 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R109 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R110 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R113 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R114 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R115 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R116 | 1-216-085-00 | s | RESISTOR,CHIP 33K 1/10W(2012) |
| R117 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R118 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R119 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R120 | 1-247-842-11 | s | RESISTOR,CARBON 3K 1/4W |
| R121 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R122 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R123 | 1-216-057-00 | s | RESISTOR,CHIP 2.2K 1/10W(2012) |
| R124 | 1-216-033-00 | s | RESISTOR,CHIP 220 1/10W(2012) |
| R125 | 1-216-039-00 | s | RESISTOR,CHIP 390 1/10W(2012) |
| R126 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R127 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R128 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R129 | 1-216-061-00 | s | RESISTOR,CHIP 3.3K 1/10W(2012) |
| R130 | 1-216-042-00 | s | RESISTOR,CHIP 510 1/10W (2125) |
| R131 | 1-216-042-00 | s | RESISTOR,CHIP 510 1/10W (2125) |
| R132 | 1-216-040-00 | s | RESISTOR,CHIP 430 1/10W (2012) |

(A BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R133 | 1-216-055-00 | s | RESISTOR,CHIP 1.8K 1/10W(2012) |
| R134 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R135 | 1-216-079-00 | s | RESISTOR,CHIP 18K 1/10W(2012) |
| R136 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R137 | 1-216-042-00 | s | RESISTOR,CHIP 510 1/10W (2125) |
| R139 | 1-216-057-00 | s | RESISTOR,CHIP 2.2K 1/10W(2012) |
| R140 | 1-208-771-11 | s | RESISTOR,CHIP 360 1/10W (2012) |
| R141 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R142 | 1-216-057-00 | s | RESISTOR,CHIP 2.2K 1/10W(2012) |
| R143 | 1-216-069-11 | s | RESISTOR,CHIP 6.8K 1/10W(2012) |
| R144 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R145 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R146 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R147 | 1-216-065-00 | s | RESISTOR,CHIP 4.7K 1/10W(2012) |
| R148 | 1-216-033-00 | s | RESISTOR,CHIP 220 1/10W(2012) |
| R149 | 1-216-042-00 | s | RESISTOR,CHIP 510 1/10W (2125) |
| R150 | 1-216-065-00 | s | RESISTOR,CHIP 4.7K 1/10W(2012) |
| R151 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R152 | 1-216-039-00 | s | RESISTOR,CHIP 390 1/10W(2012) |
| R153 | 1-216-055-00 | s | RESISTOR,CHIP 1.8K 1/10W(2012) |
| R154 | 1-216-001-00 | s | RESISTOR,CHIP 10 1/10W(2012) |
| R155 | 1-216-461-00 | s | RESISTOR,METAL FILM 5.6K/2W |
| R156 | 1-216-061-00 | s | RESISTOR,CHIP 3.3K 1/10W(2012) |
| R157 | 1-216-097-00 | s | RESISTOR,CHIP 100K 1/10W(2012) |
| R158 | 1-216-097-00 | s | RESISTOR,CHIP 100K 1/10W(2012) |
| R159 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R160 | 1-216-077-00 | s | RESISTOR,CHIP 15K 1/10W(2012) |
| R161 | 1-216-057-00 | s | RESISTOR,CHIP 2.2K 1/10W(2012) |
| R162 | 1-216-104-00 | s | RESISTOR,CHIP 200K 1/10W(2012) |
| R163 | 1-216-356-00 | s | RESISTOR,METAL FILM 3.9/1W |
| R164 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R165 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R166 | 1-216-066-00 | s | RESISTOR,CHIP 5.1K 1/10W(2012) |
| R167 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R168 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R169 | 1-249-385-11 | s | RES,CARBON 2.2 1/4W |
| R170 | 1-216-060-00 | s | RESISTOR,CHIP 3K 1/10W (2012) |
| R171 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R172 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R173 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R174 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R175 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R176 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R178 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R179 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R180 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R181 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R182 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R184 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R185 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R186 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R187 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R188 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R189 | 1-215-863-11 | s | RESISTOR,METAL 100/1W |
| R190 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R191 | 1-216-075-00 | s | RESISTOR,CHIP 12K 1/10W(2012) |
| R192 | 1-216-462-00 | s | RESISTOR,METAL FILM 8.2K/2W |
| R193 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R194 | 1-216-075-00 | s | RESISTOR,CHIP 12K 1/10W(2012) |

(A BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R195 | 1-216-046-00 | s | RESISTOR,CHIP 750 1/10W (2012) |
| R196 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R197 | 1-216-060-00 | s | RESISTOR,CHIP 3K 1/10W (2012) |
| R198 | 1-216-060-00 | s | RESISTOR,CHIP 3K 1/10W (2012) |
| R199 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R200 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R201 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R202 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R203 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R204 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R205 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R206 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R208 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R209 | 1-216-061-00 | s | RESISTOR,CHIP 3.3K 1/10W(2012) |
| R210 | 1-216-071-00 | s | RESISTOR,CHIP 8.2K 1/10W(2012) |
| R211 | 1-216-003-11 | s | RESISTOR,CHIP 12 1/10W(2012) |
| R212 | 1-216-066-00 | s | RESISTOR,CHIP 5.1K 1/10W(2012) |
| R213 | 1-216-065-00 | s | RESISTOR,CHIP 4.7K 1/10W(2012) |
| R214 | 1-216-093-11 | s | RESISTOR,CHIP 68K |
| R215 | 1-216-689-11 | s | RESISTOR,CHIP 39K 1/10W(2012) |
| R216 | 1-216-074-00 | s | RESISTOR,CHIP 11K 1/10W(2012) |
| R217 | 1-216-082-00 | s | RESISTOR,CHIP 24K 1/10W(2012) |
| R218 | 1-216-070-00 | s | RESISTOR,CHIP 7.5K 1/10W(2012) |
| R219 | 1-216-027-00 | s | RESISTOR,CHIP 120 1/10W(2012) |
| R220 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R221 | 1-216-041-11 | s | RESISTOR,CHIP 470 1/10W (2012) |
| R222 | 1-216-093-11 | s | RESISTOR,CHIP 68K |
| R223 | 1-216-021-00 | s | RESISTOR,CHIP 68 1/10W(2012) |
| R224 | 1-216-107-00 | s | RESISTOR,CHIP 270K 1/10W(2012) |
| R225 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R226 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R227 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R228 | 1-216-035-00 | s | RESISTOR,CHIP 270 1/10W(2012) |
| R229 | 1-216-035-00 | s | RESISTOR,CHIP 270 1/10W(2012) |
| R230 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R231 | 1-216-061-00 | s | RESISTOR,CHIP 3.3K 1/10W(2012) |
| R232 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R233 | 1-216-356-00 | s | RESISTOR,METAL FILM 3.9/1W |
| R234 | 1-216-037-00 | s | RESISTOR,CHIP 330 1/10W(2012) |
| R235 | 1-216-077-00 | s | RESISTOR,CHIP 15K 1/10W(2012) |
| R236 | 1-216-077-00 | s | RESISTOR,CHIP 15K 1/10W(2012) |
| R237 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R238 *1 | 1-216-085-00 | s | RESISTOR,CHIP 33K 1/10W(2012) |
| R238 *2 | 1-216-689-11 | s | RESISTOR,CHIP 39K 1/10W(2012) |
| R239 *1 | 1-216-101-00 | s | RESISTOR,CHIP 150K 1/10W(2012) |
| R239 *2 | 1-216-104-00 | s | RESISTOR,CHIP 200K 1/10W(2012) |
| R240 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R241 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R242 | 1-216-081-00 | s | RESISTOR,CHIP 22K 1/10W(2012) |
| R243 | 1-216-142-00 | s | RESISTOR,CHIP 4.7 1/8W(3216) |
| R244 | 1-216-142-00 | s | RESISTOR,CHIP 4.7 1/8W(3216) |
| R245 | 1-216-097-00 | s | RESISTOR,CHIP 100K 1/10W(2012) |
| R246 | 1-216-089-00 | s | RESISTOR,CHIP 47K 1/10W(2012) |
| R247 | 1-216-093-11 | s | RESISTOR,CHIP 68K |
| R248 | 1-216-061-00 | s | RESISTOR,CHIP 3.3K 1/10W(2012) |
| R249 | 1-216-083-00 | s | RESISTOR,CHIP 27K 1/10W(2012) |
| R250 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R251 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R252 | 1-216-035-00 | s | RESISTOR,CHIP 270 1/10W(2012) |
| R253 | 1-216-104-00 | s | RESISTOR,CHIP 200K 1/10W(2012) |

(A BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R254 | 1-216-121-00 | s | RESISTOR,CHIP 1M 1/10W(2012) |
| R255 | 1-216-610-11 | s | RESISTOR,CHIP 20 1/10W(2012) |
| R256 | 1-216-031-00 | s | RESISTOR,CHIP 180 1/10W(2012) |
| R258 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R260 | 1-215-869-11 | s | RESISTOR,METAL FILM 1K/1W |
| R261 | 1-216-133-00 | s | RESISTOR,CHIP 3.3M 1/10W(2012) |
| R264 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R265 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R266 | 1-216-047-00 | s | RESISTOR,CHIP 820 1/10W(2012) |
| RV102 *1 | 1-225-796-11 | s | RESISTOR,ADJ,CERMET 100K |
| RV102 *2 | 1-237-039-11 | s | RESISTOR,ADJ,CERMET 100K |
| RV103 *1 | 1-225-791-11 | s | RESISTOR,ADJ,CERMET 5K |
| RV103 *2 | 1-237-035-11 | s | RESISTOR,ADJ,CERMET 5K |
| RV104 *1 | 1-225-789-11 | s | RESISTOR,ADJ,CERMET 2K |
| RV104 *2 | 1-237-034-11 | s | RESISTOR,ADJ,CERMET 2K |
| RV105 *1 | 1-225-787-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV105 *2 | 1-237-032-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV107 *1 | 1-225-796-11 | s | RESISTOR,ADJ,CERMET 100K |
| RV107 *2 | 1-237-039-11 | s | RESISTOR,ADJ,CERMET 100K |
| RV108 *1 | 1-225-787-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV108 *2 | 1-237-032-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV109 *1 | 1-225-787-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV109 *2 | 1-237-032-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV110 *1 | 1-225-797-11 | s | RESISTOR,ADJ,CERMET 200K |
| RV110 *2 | 1-237-040-11 | s | RESISTOR,ADJ,CERMET 200K |
| RV111 *1 | 9-939-789-01 | s | RESISTOR,ADJ, 1M |
| RV111 *2 | 1-237-524-21 | s | RESISTOR,ADJ,CERMET 1M |
| SG101 | 1-519-422-11 | s | GAP,SPARK |
| SG102 | 1-519-422-11 | s | GAP,SPARK |
| TP103 *2 | 1-535-757-11 | s | CHIP,CHECKER (CONNECTOR) |
| TP111 *2 | 1-535-757-11 | s | CHIP,CHECKER (CONNECTOR) |
| TP112 *2 | 1-535-757-11 | s | CHIP,CHECKER (CONNECTOR) |
| TP114 *2 | 1-535-757-11 | s | CHIP,CHECKER (CONNECTOR) |
| TP118 *2 | 1-535-757-11 | s | CHIP,CHECKER (CONNECTOR) |

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D BOARD
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Note:
*1 Serial No. 10001- (UC)
Serial No. 30001- (J)
Serial No. 40001- (AEP)
*2 Serial No. 100001- (UC, J)
Serial No. 400001- (CE)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 9-939-887-02 | o | MOUNTED CIRCUIT BOARD, D |
| C301 | 1-107-686-11 | s | CAPACITOR,TANTALUM 4.7MF/16V |
| C302 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C303 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C304 | 1-130-202-00 | s | CAPACITOR,FILM 0.022MF/400V PP |
| C305 | 1-104-913-11 | s | CAPACITOR,TANTALUM 10MF/16V |
| C306 | 1-130-202-00 | s | CAPACITOR,FILM 0.022MF/400V PP |
| C307 | 1-104-666-11 | s | CAPACITOR,ELECT 220MF/25V |
| C308 | 9-885-015-34 | s | CAPACITOR,ELECT 47MF/100V |
| C309 | 1-126-941-11 | s | CAPACITOR,ELECT 470MF/25V |
| C311 | ⚠ 1-163-145-00 | s | CAPACITOR,CHIP CERAMIC 1500PF |
| C312 | ⚠ 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C313 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C314 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| C315 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C316 | 1-104-913-11 | s | CAPACITOR,TANTALUM 10MF/16V |
| C317 | 9-939-783-01 | s | CAPACITOR,ELECT 6.8MF/50V |
| C318 | 1-164-346-11 | s | CAPACITOR,CHIP CERAMIC 1MF/16V |
| CN301 | 1-564-704-11 | o | PIN,CONNECTOR (2P) |
| CN302 | 1-564-708-11 | o | PIN,CONNECTOR (6P) |
| CN303 | 1-564-506-11 | o | PLUG,CONNECTOR (3P) |
| CN304 | 1-564-706-11 | s | PIN,CONNECTOR (4P) |
| CN305 | 1-506-945-11 | o | PIN,CONNECTOR 3P |
| D301 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| D302 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| D303 | 8-719-074-79 | s | DIODE YG911S2R |
| D304 | 8-719-948-45 | s | DIODE ERA22-08 |
| D305 | 8-719-036-65 | s | DIODE RD2.0SB-T1 |
| D306 | 8-719-068-64 | s | DIODE MA143A-(TX).SO |
| IC301 | 8-759-095-59 | s | IC M5237ML-TP1 |
| IC302 | 8-759-824-98 | s | IC BA15218F-E2 |
| L301 *1 | 9-939-883-01 | s | COIL, INDUCTOR 250uH |
| L301 *2 | 9-885-015-36 | s | COIL, INDUCTOR 250uH |
| L302 *1 | 9-939-884-01 | s | COIL (HLC) |
| L302 *2 | 9-885-015-38 | s | HLC VF-60 |
| Q301 | 9-939-809-01 | s | TRANSISTOR 2SK2012 |
| Q303 | 9-939-806-01 | s | TRANSISTOR 2SB1548 |
| Q305 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q306 | 8-729-026-52 | s | TRANSISTOR 2SA1576A-T106-R |
| R301 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R302 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| R303 | 1-216-298-00 | s | RESISTOR,CHIP 2.2 1/10(2012) |
| R304 | 1-216-065-00 | s | RESISTOR,CHIP 4.7K 1/10W(2012) |
| R305 | 1-216-065-00 | s | RESISTOR,CHIP 4.7K 1/10W(2012) |
| R306 | 1-216-297-11 | s | RESISTOR,CHIP 5.1 |
| R307 | 1-216-070-00 | s | RESISTOR,CHIP 7.5K 1/10W(2012) |
| R308 | 1-216-025-00 | s | RESISTOR,CHIP 100 1/10W(2012) |
| R309 | 1-216-121-00 | s | RESISTOR,CHIP 1M 1/10W(2012) |
| R310 | 1-216-121-00 | s | RESISTOR,CHIP 1M 1/10W(2012) |

(D BOARD)

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| R311 | ⚠ 1-216-068-00 | s | RESISTOR,CHIP 6.2K 1/10W(2012) |
| R312 | ⚠ 1-216-077-00 | s | RESISTOR,CHIP 15K 1/10W(2012) |
| R313 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R314 | 1-216-033-00 | s | RESISTOR,CHIP 220 1/10W(2012) |
| R315 | 1-216-084-00 | s | RESISTOR,CHIP 30K 1/10W(2012) |
| R316 | 1-216-065-00 | s | RESISTOR,CHIP 4.7K 1/10W(2012) |
| R317 | 1-216-049-11 | s | RESISTOR,CHIP 1K 1/10W(2012) |
| R318 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| R319 | 1-216-297-11 | s | RESISTOR,CHIP 5.1 |
| R320 | 1-216-295-00 | s | CONDUCTOR CHIP (2012) |
| RV301 *1 | 1-225-789-11 | s | RESISTOR ADJ 2K (CERMET) |
| RV301 *2 | 1-237-034-11 | s | RESISTOR,ADJ,CERMET 2K |
| RV302 *1 | ⚠ 1-225-791-11 | s | RESISTOR,VARIABLE CHIP 5K |
| RV302 *2 | ⚠ 1-237-035-11 | s | RESISTOR,ADJ,CERMET 5K |

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G BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 9-939-894-02 | o | MOUNTED CIRCUIT BOARD, G |
| C501 | 1-104-666-11 | s | CAPACITOR,ELECT 220MF/25V |
| C502 | 1-104-666-11 | s | CAPACITOR,ELECT 220MF/25V |
| C503 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C504 | 1-163-275-11 | s | CAPACITOR,CERAMIC 1000PF/50V |
| C505 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C506 | 1-163-117-00 | s | CAPACITOR,CHIP CERAMIC 100PF |
| C507 ✻1 | 9-980-048-01 | s | CAPACITOR,ELECT 820MF/25V |
| C507 ✻2 | 9-885-015-35 | s | CAPACITOR,ELECT 820MF/25V |
| C508 | 1-104-666-11 | s | CAPACITOR,ELECT 220MF/25V |
| C509 | 1-104-666-11 | s | CAPACITOR,ELECT 220MF/25V |
| C510 | 1-164-004-11 | s | CAPACITOR,CERAMIC 0.1MF/25V |
| C511 | 1-104-823-11 | s | CAPACITOR,TANTALUM 47MF/16V |
| CN501 | 1-564-719-11 | s | PIN,CONNECTOR (3P) |
| CN502 | 1-564-718-11 | s | PIN,CONNECTOR (2P) |
| D501 | 9-980-049-01 | s | DIODE DSA3A2 |
| D502 | 8-719-981-00 | s | DIODE ERC81-004 |
| IC501 | 8-759-144-88 | s | IC UPC494GS |
| L501 | 9-885-015-37 | s | COIL, INDUCTOR 22uH |
| L502 | 9-939-839-01 | s | COIL, INDUCTOR 65uH |
| L503 | 9-885-015-37 | s | COIL, INDUCTOR 22uH |
| L504 | 9-885-015-37 | s | COIL, INDUCTOR 22uH |
| Q501 | 8-729-905-38 | s | TRANSISTOR 2SC4081T106R |
| Q502 | 8-729-026-51 | s | TRANSISTOR 2SA1576A-T106-Q |
| Q503 | 8-729-023-70 | s | TRANSISTOR 2SJ246S-TL |
| R501 | 1-216-679-11 | s | RESISTOR,CHIP 15K 1/10W(2012) |
| R502 | 1-216-079-00 | s | RESISTOR,CHIP 18K 1/10W(2012) |
| R503 | 1-216-001-00 | s | RESISTOR,CHIP 10 1/10W(2012) |
| R504 | 1-216-017-00 | s | RESISTOR,CHIP 47 1/10W(2012) |
| R505 | 1-216-679-11 | s | RESISTOR,CHIP 15K 1/10W(2012) |
| R506 | 1-216-672-11 | s | RESISTOR,CHIP 7.5K 1/10W(2012) |
| R507 | 1-216-672-11 | s | RESISTOR,CHIP 7.5K 1/10W(2012) |
| R508 | 1-216-661-11 | s | RESISTOR,CHIP 2.7K 1/10W(2012) |
| R509 | 1-216-101-00 | s | RESISTOR,CHIP 150K 1/10W(2012) |
| R510 | 1-216-073-00 | s | RESISTOR,CHIP 10K 1/10W(2012) |
| RV501 ✻1 | 1-225-789-11 | s | RESISTOR,ADJ,CERMET 500 |
| RV501 ✻2 | 1-237-032-11 | s | RESISTOR,ADJ,CERMET 500 |

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H1 BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 9-939-875-02 | o | MOUNTED CIRCUIT BOARD, H1 |
| CN201 | 1-580-716-11 | s | PIN, CONNECTOR (PC BOARD) 13P |
| RV201 | 9-939-873-01 | s | RESISTOR, VARIABLE 50K |
| RV202 | 9-939-871-01 | s | RESISTOR, VARIABLE 2K |
| RV203 | 9-939-872-01 | s | RESISTOR, VARIABLE 5K |
| SW201 | 9-939-874-01 | s | SWITCH (PEAKING SW) |
| SW202 | 9-939-874-01 | s | SWITCH (TALLY SW) |

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H2A BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| CN601 | 1-566-760-11 | s | PIN,CONNECTOR (PC BOARD) 5P |
| D601 | 8-719-950-78 | s | LED LD-001DU |
| D602 | 8-719-946-55 | s | LED LD-001VR |
| D603 | 8-719-950-78 | s | LED LD-001DU |

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H2B BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| CN602 | 1-566-759-11 | s | PIN,CONNECTOR 4P |
| D605 | 8-719-946-55 | s | LED LD-001VR |
| D606 | 8-719-032-46 | s | DIODE LD-001MGLM |

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P BOARD
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| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 9-939-889-02 | o | MOUNTED CIRCUIT BOARD, P (INCLUDED FLYBACK TRANS FBT301) |
| CN401 | 1-564-708-11 | o | PIN,CONNECTOR (6P) |
| CN402 | 1-506-944-11 | o | PIN,CONNECTOR 2P |
| D401 | 8-719-300-33 | s | DIODE RU3AM |
| R401 | ⚠ 1-247-887-00 | s | RESISTOR,CARBON 220K 1/4W |

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Q BOARD
---

| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| 1pc | 9-939-878-02 | o | MOUNTED CIRCUIT BOARD, Q |
| CN701 | 1-695-904-11 | s | PIN, CONNECTOR (PC BOARD) 20P |
| CN702 | 9-939-877-01 | s | CONNECTOR TX20A |

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ACCESSORIES
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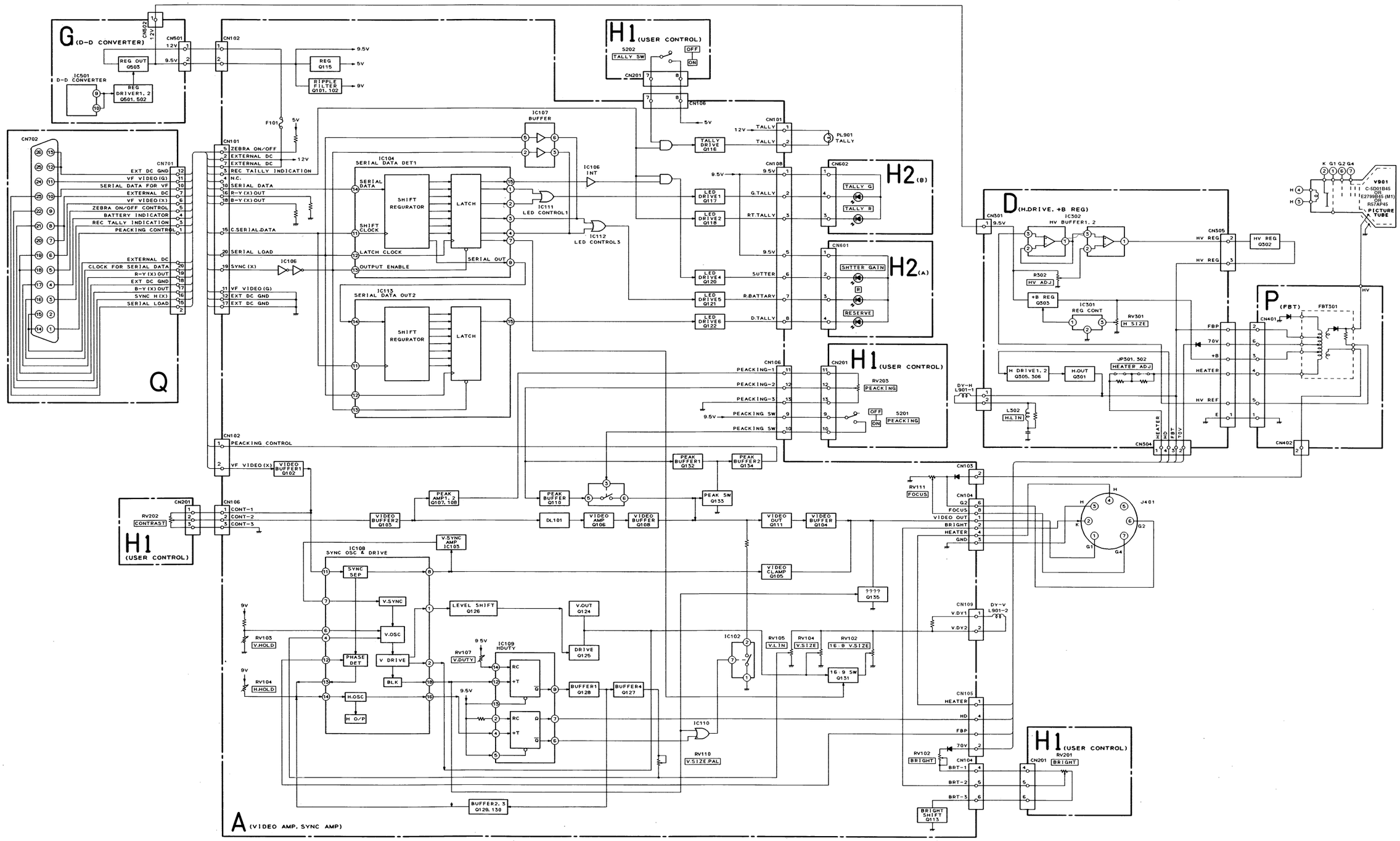
| Ref. No. or Q'ty | Part No. | SP | Description |
|---|---|---|---|
| | 1-782-352-11 | s | CABLE B, VF (20P-26P) |
| | 1-782-353-11 | s | CABLE A, VF (8P-26P) |
| | 3-167-517-01 | s | PLATE, NUMBER |
| | 3-167-525-02 | o | HOOD, VF |
| | 3-859-686-01 | s | MANUAL, INSTRUCTION (JAPANESE, ITALIAN, CHINESE) |
| | 4-058-477-01 | o | INDIVIDUAL CARTON |
| | 4-058-478-01 | o | CUSHON (UPPER) ASSY |
| | 4-058-481-01 | o | CUSHON, LOWER |
| | X-3705-096-1 | o | STAND ASSY |

# Section 7
# Block Diagrams



# Section 8
# Diagrams

**Note:**
- Parts marked " * " differ according to the model/destination. Refer to the mount table for each function.
- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics.
- All electrolytics are in 50 V unless otherwise specified.
- : fusible resistor
- : nonflammable resistor
- Δ : internal component
- : panel designation and adjustment for repair
- Caution when replacing chip parts
  New parts must be attached after removal of the chip.
  Be careful not to heat the minus side of a tantalum capacitor, because it is easily damaged by the heat.

**Reference information**

| | | |
|---|---|---|
| RESISTOR | RN | : METAL FILM |
| | RC | : SOLID |
| | FPRD | : NONFLAMMABLE CARBON |
| | FUSE | : NONFLAMMABLE FUSIBLE |
| | RS | : NONFLAMMABLE METAL OXIDE |
| | RB | : NONFLAMMABLE CEMENT |
| | RW | : NONFLAMMABLE WIREWOUND |
| | ※ | : ADJUSTMENT RESISTOR |
| COIL | LF-8L | : MICRO INDUCTOR |
| CAPACITOR | TA | : TANTALUM |
| | PS | : STYROL |
| | PP | : POLYPROPYLENE |
| | PT | : MYLAR |
| | MPS | : METALIZED POLYESTER |
| | MPP | : METALIZED POLYPROPYLENE |
| | ALB | : BIPOLAR |
| | ALT | : HIGH TEMPERATURE |
| | ALR | : HIGH RIPPLE |

- The components marked ⋈ in this schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
- When replacing components marked ◪, make the necessary adjustments indicated. If results do not meet the specified value, change the component marked ⋈ and repeat the adjustment until the specified value is achieved.
- When replacing a part shown in the table below, be sure to perform the related adjustment.

**[Measuring conditions, voltage and waveform]**
- A voltage value is the reference value between the measurement point and the earth, when the color bar signal is received from the color bar generator. (digital multi-meter used: 10 M ohms/V DC)
- Unit of voltage is V (volt).
  (Voltage variations may occur due to normal production tolerances.)
- : B line
- No mark : Color bar signal.
- Circled numbers indicate the reference waveform.
- : Signal path.

The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par la marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

【使用上の注意】
- ＊印のある部品は，機種などにより異なりますので機種別マウント一覧表を参照してください。
- 回路図中の＃マークはマウントされていません。
- ケミコン，タンタルを除くコンデンサで耐圧 50V 以下のものは，その耐圧を省略。単位はすべて µF（p は pF）
- ケミコン，タンタルのコンデンサで耐圧 50V は省略。
- 印はヒューズ抵抗。
- 印は不燃性抵抗。
- Δ 印は内蔵部品。
- 印はパネル表示名称および調整名称。
- チップ部品交換時の注意
  取り外した部品は再使用せず，未使用の部品をご使用ください。
  タンタルコンデンサのマイナス側は熱に弱いため注意してください。

ー部品特性省略表ー
- 固定抵抗

| | |
|---|---|
| RN | : 金属被膜 |
| RC | : ソリッド |
| FPRD | : 不燃性カーボン |
| FUSE | : 不燃性ヒューズ |
| RS | : 不燃性酸化金属被膜 |
| RB | : 不燃性セメント |
| RW | : 不燃性巻線 |
| ※ | : 調整抵抗 |

- マイクロインダクタ

| | |
|---|---|
| LF-8L | : マイクロインダクタ |

- コンデンサ

| | |
|---|---|
| TA | : タンタル |
| PS | : スチロール |
| PP | : ポリプロピレン |
| PT | : マイラ |
| MPS | : メタライズドポリエステル |
| MPP | : メタライズドポリプロピレン |
| ALB | : バイポーラ |
| ALT | : 高温用 |
| ALR | : ハイリップル |

- ⋈ 印の部品の定数は，X線量規制を満足させるため，製造時セット毎に確認し決定したものです。この部品を交換する場合は，セットに付いている部品と同一のものをご使用ください。
  また，回路図上の ◪ 印の部品を交換した場合は，指定された調整，確認が必要です。確認の結果が指示した値と合致しない場合は，⋈ 印の部品を交換し，必ず指定した値と合致するように調整してください。

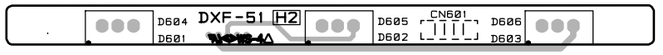
【電圧・波形測定条件注意】
- 電圧値は，カラーバーゼネレータより カラーバー信号を受信したときの対アース間の参考値。
  (使用デジタルマルチメーター 10 MΩ/V DC)
- 電圧値の単位は V（ボルト）
  (実測値は異なる場合があります。)
- ：B＋ライン
- 無印は カラーバー信号。
- 丸数字は波形表の番号。
- は信号経路。

⚠ 印の部品は，安全性を維持するために，重要な部品です。従って交換時は，必ず指定の部品を使用してください。

A, H2 (A)/H2 (B)

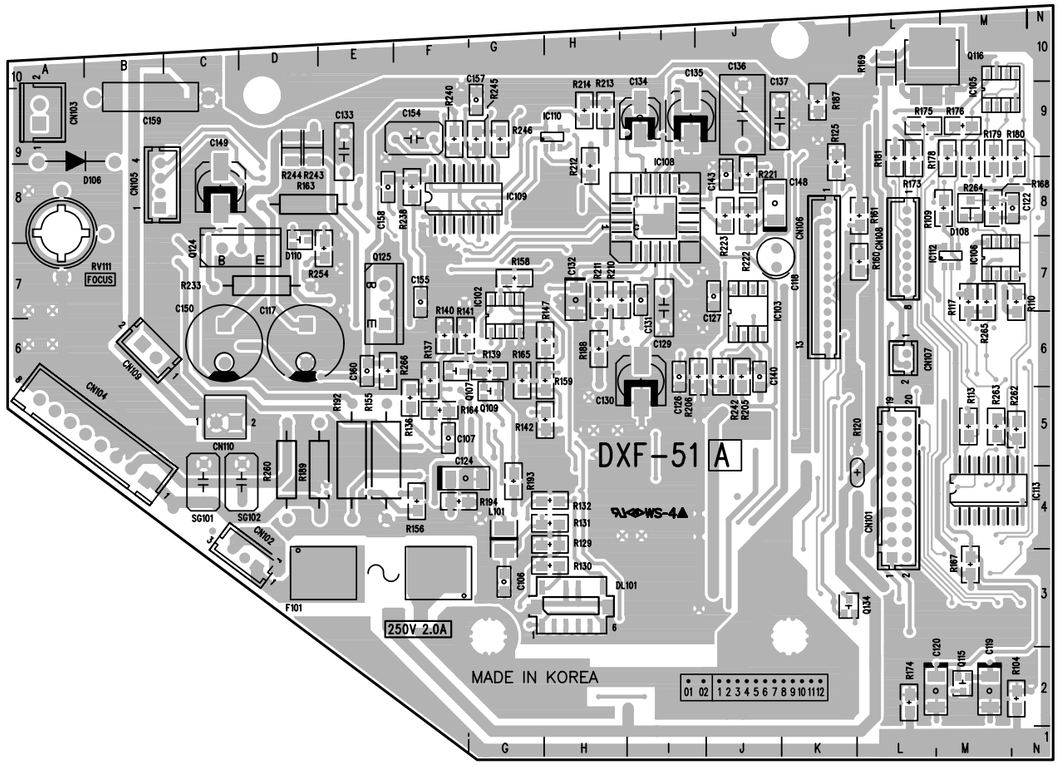
## 8-1. Schematic Diagrams and Printed Wiring Boards

**Serial No. 100001–(UC, J)**
**Serial No. 400001–(CE)**

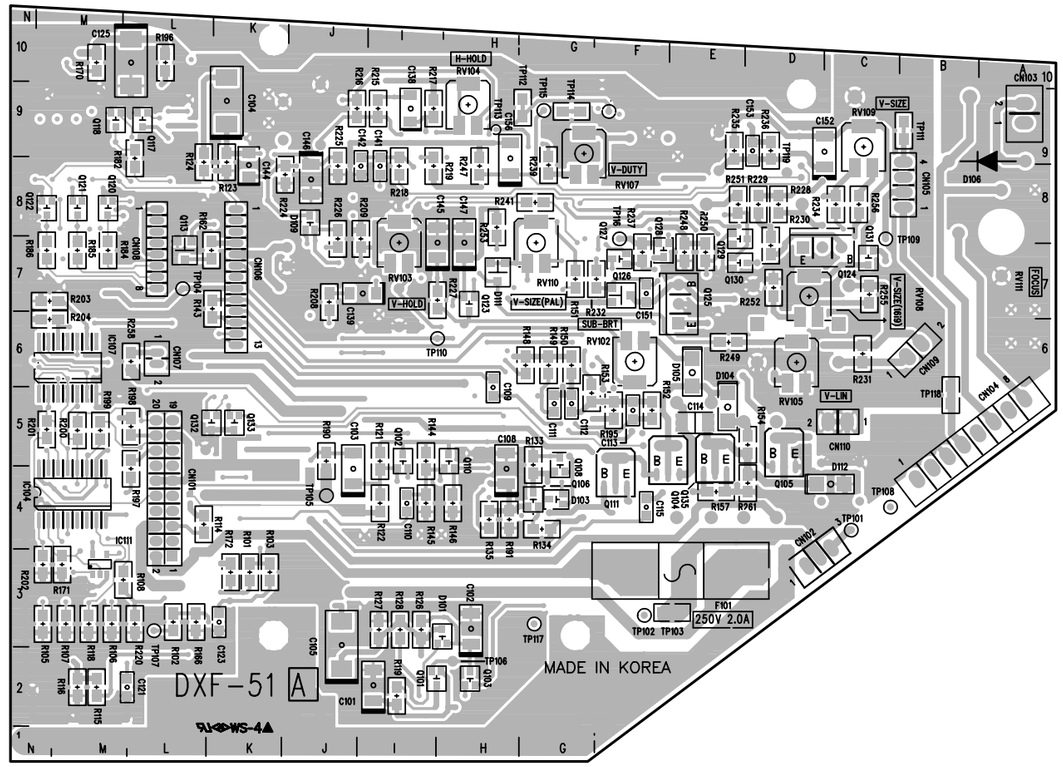



**H2 (A)/H2 (B)** -Component side-

**H2 (A)/H2 (B)** -Conductor side-




**A** -Component side-




**A** -Conductor side-

### A BOARD

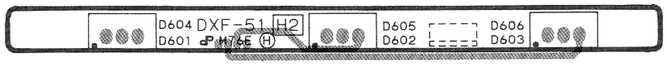
* : Conductor side

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| D101 | *I-3 | IC110 | H-9 | Q117 | *L-9 | Q135 | *E-5 | TP108 | *C-4 |
| D103 | *G-4 | IC111 | *M-3 | Q118 | *M-9 | | | TP109 | *C-7 |
| D104 | *E-5 | IC112 | M-7 | Q120 | *M-8 | RV102 | *F-6 | TP110 | *I-6 |
| D105 | *E-6 | IC113 | M-4 | Q121 | *M-8 | RV103 | *I-7 | TP111 | *B-9 |
| D106 | A-9 | | | Q122 | *M-8 | RV104 | *H-9 | TP112 | *G-9 |
| D108 | M-8 | Q101 | *I-2 | Q123 | *H-7 | RV105 | *D-6 | TP113 | *H-9 |
| D109 | *J-8 | Q102 | *I-5 | Q124 | C-7 | RV107 | *F-8 | TP114 | *G-9 |
| D110 | D-8 | Q103 | *H-2 | Q124 | *C-7 | RV108 | *D-7 | TP115 | *G-9 |
| D111 | *H-7 | Q104 | *E-5 | Q125 | E-7 | RV109 | *C-9 | TP116 | *F-7 |
| D112 | *C-4 | Q105 | *D-4 | Q125 | *E-7 | RV110 | *G-7 | TP117 | *G-3 |
| | | Q106 | *G-4 | Q126 | *F-7 | RV111 | A-8 | TP118 | *B-4 |
| IC102 | G-7 | Q107 | F-6 | Q127 | *F-7 | | | TP119 | *D-9 |
| IC103 | J-7 | Q108 | *G-4 | Q128 | *F-7 | TP101 | *C-4 | | |
| IC104 | *M-4 | Q109 | G-5 | Q129 | *E-7 | TP102 | *F-3 | | |
| IC105 | M-9 | Q110 | *H-5 | Q130 | *E-7 | TP103 | *F-3 | | |
| IC106 | M-7 | Q111 | *F-5 | Q131 | *C-7 | TP104 | *L-7 | | |
| IC107 | *M-6 | Q113 | *L-8 | Q132 | *L-5 | TP105 | *J-4 | | |
| IC108 | I-8 | Q115 | M-2 | Q133 | *K-5 | TP106 | *H-2 | | |
| IC109 | G-8 | Q116 | M-10 | Q134 | K-3 | TP107 | *L-3 | | |

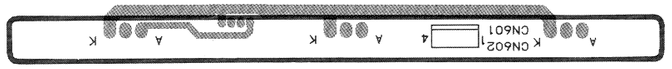

8-2 (b)

A, H2 (A)/H2 (B)

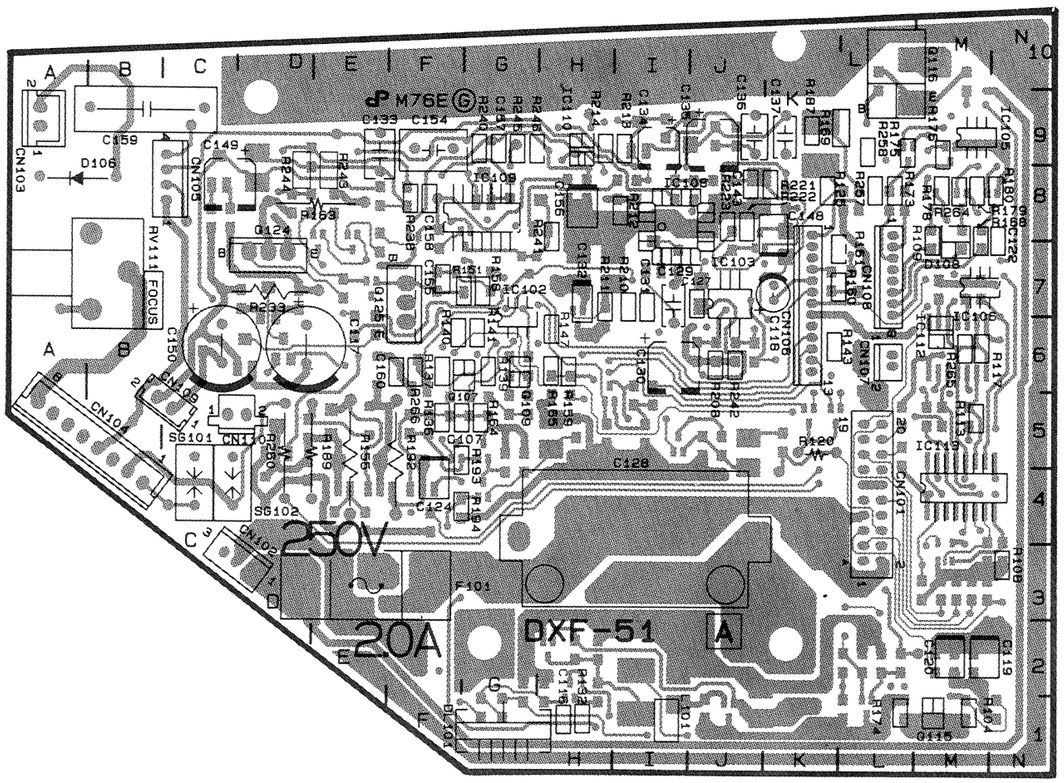
Serial No. 10001–(UC)
Serial No. 30001–(J)
Serial No. 40001–(AEP)



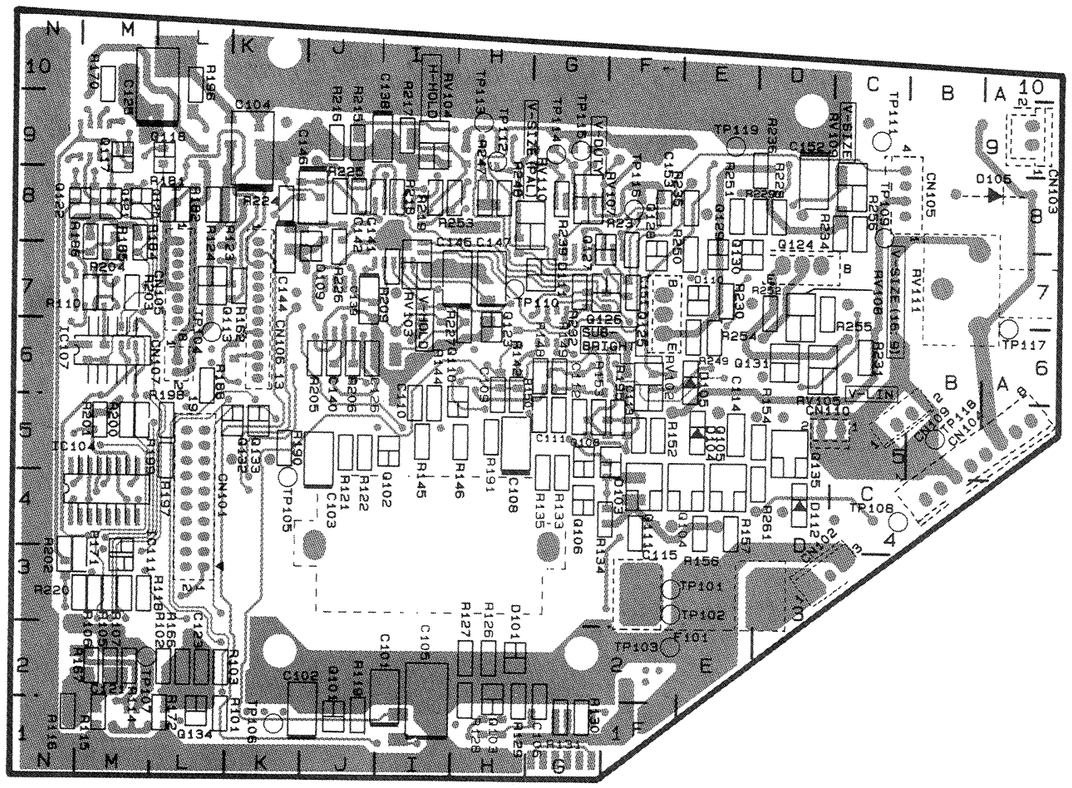

**H2 (A)/H2 (B)** -Component side-




**H2 (A)/H2 (B)** -Conductor side-




**A** -Component side-




**A** -Conductor side-

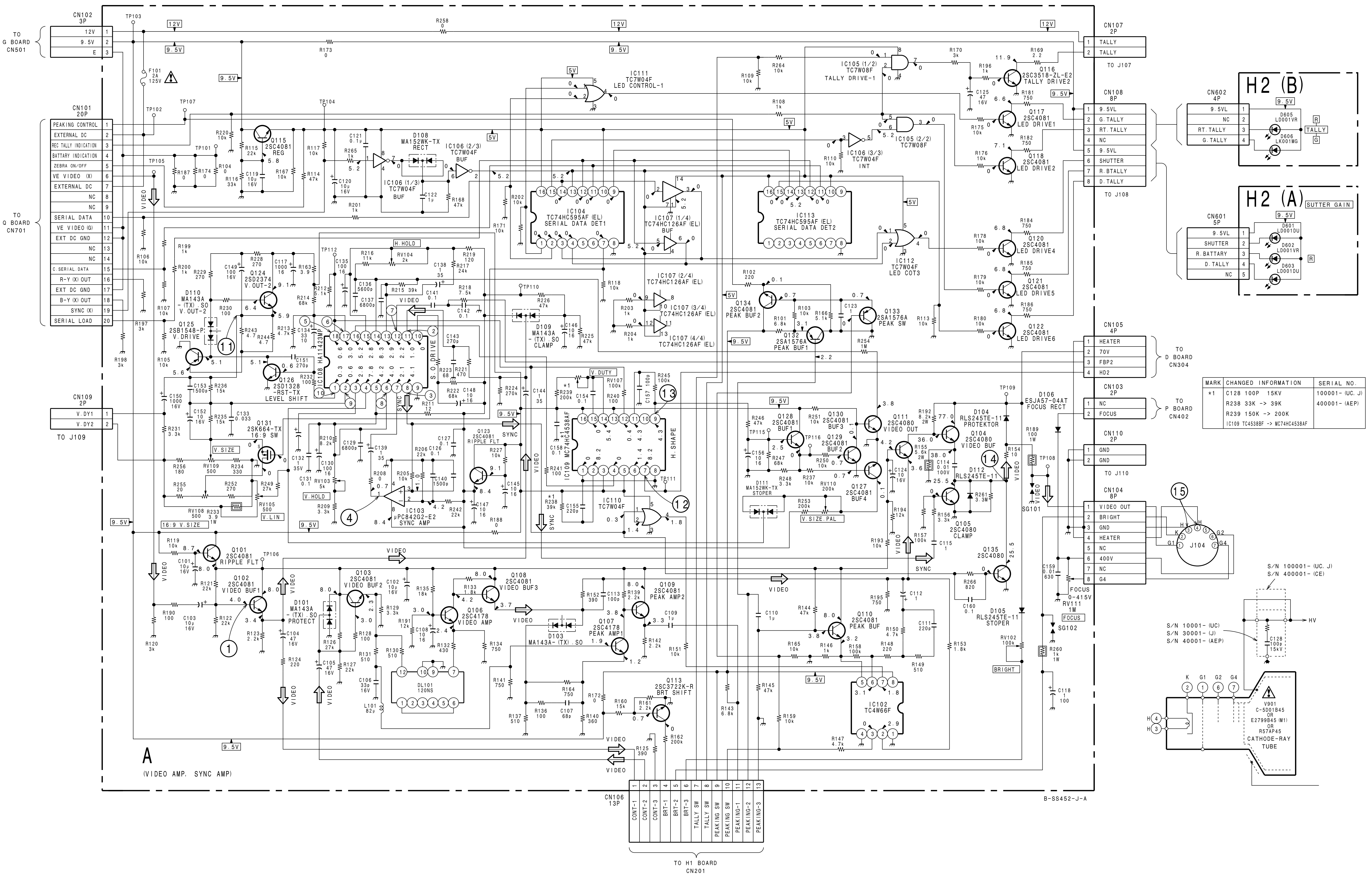
## A BOARD

* : Conductor side

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| D101 | *I-3 | IC110 | H-9 | Q117 | *L-9 | Q135 | *E-5 | TP108 | *C-4 |
| D103 | *G-4 | IC111 | *M-3 | Q118 | *M-9 | | | TP109 | *C-7 |
| D104 | *E-5 | IC112 | M-7 | Q120 | *M-8 | RV102 | *F-6 | TP110 | *I-6 |
| D105 | *E-6 | IC113 | M-4 | Q121 | *M-8 | RV103 | *I-7 | TP111 | *B-9 |
| D106 | A-9 | | | Q122 | *M-8 | RV104 | *H-9 | TP112 | *G-9 |
| D108 | M-8 | Q101 | *I-2 | Q123 | *H-7 | RV105 | *D-6 | TP113 | *H-9 |
| D109 | *J-8 | Q102 | *I-5 | Q124 | C-7 | RV107 | *F-8 | TP114 | *G-9 |
| D110 | D-8 | Q103 | *H-2 | Q124 | *C-7 | RV108 | *D-7 | TP115 | *G-9 |
| D111 | *H-7 | Q104 | *E-5 | Q125 | E-7 | RV109 | *C-9 | TP116 | *F-7 |
| D112 | *C-4 | Q105 | *D-4 | Q125 | *E-7 | RV110 | *G-7 | TP117 | *G-3 |
| | | Q106 | *G-4 | Q126 | *F-7 | RV111 | A-8 | TP118 | *B-4 |
| IC102 | G-7 | Q107 | F-6 | Q127 | *F-7 | | | TP119 | *D-9 |
| IC103 | J-7 | Q108 | *G-4 | Q128 | *F-7 | TP101 | *C-4 | | |
| IC104 | *M-4 | Q109 | G-5 | Q129 | *E-7 | TP102 | *F-3 | | |
| IC105 | M-9 | Q110 | *H-5 | Q130 | *E-7 | TP103 | *F-3 | | |
| IC106 | M-7 | Q111 | *F-5 | Q131 | *C-7 | TP104 | *L-7 | | |
| IC107 | *M-6 | Q113 | *L-8 | Q132 | *L-5 | TP105 | *J-4 | | |
| IC108 | I-8 | Q115 | M-2 | Q133 | *K-5 | TP106 | *H-2 | | |
| IC109 | G-8 | Q116 | M-10 | Q134 | K-3 | TP107 | *L-3 | | |


8-2 (a)

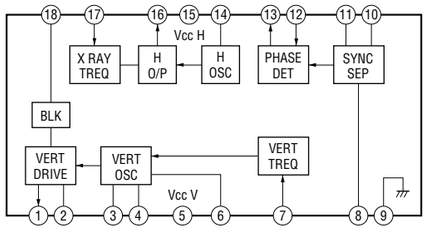
A, H2 (A)/H2 (B)


A
(VIDEO AMP, SYNC AMP)
H2 (B)
H2 (A)
SUTTER GAIN
TO G BOARD CN501
CN102 3P
12V
9.5V
E
TO Q BOARD CN701
CN101 20P
PEAKING CONTROL
EXTERNAL DC
REC TALLY INDICATION
BATTARY INDICATION
ZEBRA ON/OFF
VE VIDEO (X)
EXTERNAL DC
NC
SERIAL DATA
VE VIDEO (G)
EXT DC GND
C.SERIAL.DATA
R-Y (X) OUT
B-Y (X) OUT
SYNC (X)
SERIAL LOAD
CN109 2P
V.DY1
V.DY2
TO J109
CN107 2P
TALLY
TO J107
CN108 8P
9.5VL
G.TALLY
RT.TALLY
SHUTTER
R.BTALLY
D.TALLY
TO J108
CN602 4P
CN601 5P
R.BATTARY
CN105 4P
HEATER
70V
FBP2
HD2
TO D BOARD CN304
CN103 2P
FOCUS
TO P BOARD CN402
CN110 2P
GND
TO J110
CN104 8P
VIDEO OUT
BRIGHT
400V
G4
J104
CN106 13P
CONT-1
CONT-2
CONT-3
BRT-1
BRT-2
BRT-3
TALLY SW
PEAKING SW
PEAKING-1
PEAKING-2
PEAKING-3
TO H1 BOARD CN201
IC104 TC74HC595AF (EL) SERIAL DATA DET1
IC113 TC74HC595AF (EL) SERIAL DATA DET2
IC108 HA11423MP
IC109 MC74HC4538AF
IC103 μPC842G2-E2 SYNC AMP
IC102 TC4W66F
IC110 TC7W04F
IC111 TC7W04F LED CONTROL-1
IC112 TC7W04F LED COT3
IC105 (1/2) TC7W08F TALLY DRIVE-1
IC105 (2/2) TC7W08F
IC106 (1/3) TC7W04F BUF
IC106 (2/3) TC7W04F BUF
IC106 (3/3) TC7W04F INT
IC107 (1/4) TC74HC126AF (EL) BUF
DL101 120NS
V901 C-5D01B45 OR E2799B45 (M1) OR R57AP45 CATHODE-RAY TUBE
S/N 100001- (UC, J)
S/N 400001- (CE)
S/N 10001- (UC)
S/N 30001- (J)
S/N 40001- (AEP)
HV
B-SS452-J-A

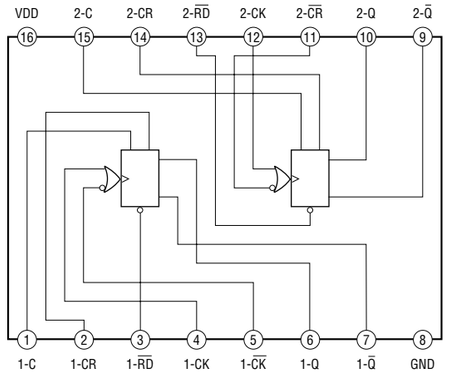
| MARK | CHANGED INFORMATION | SERIAL NO. |
|---|---|---|
| *1 | C128 100P 15KV | 100001- (UC, J) |
| | R238 33K -> 39K | 400001- (AEP) |
| | R239 150K -> 200K | |
| | IC109 TC4538BF -> MC74HC4538AF | |

A, H2 (A)/H2 (B)

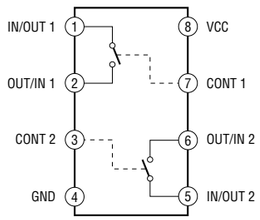
## HA11423MP (IC108)



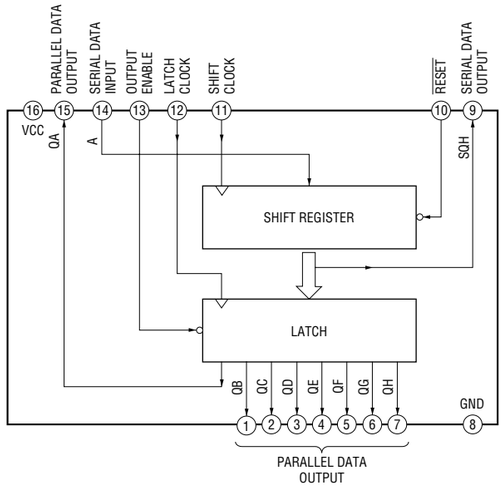

## MC74HC4538AF (IC109)




## TC4W66F (IC102)




## TC74HC595AF (EL) (IC104, IC113)

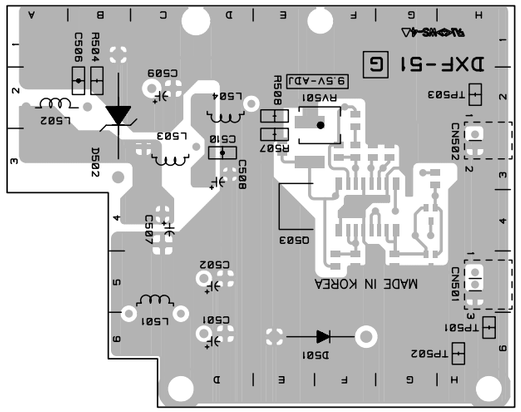



## A Board Waveforms

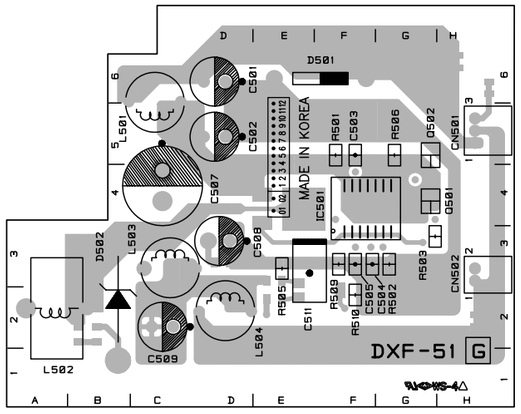
| | |
|---|---|
| ① Q102-Ⓑ<br>1 Vp-p (H) | ⑪ Q124-Ⓔ<br>12.8 Vp-p (V) |
| ② IC108-⑪<br>844 mVp-p (H) | ⑫ IC109-⑦<br>9.84 Vp-p (H) |
| ③ IC108-⑧<br>7.7 Vp-p (H) | ⑬ IC109-⑨<br>9.7 Vp-p (30 Hz) |
| ④ IC103-①<br>7.25 Vp-p (V) | ⑭ Q105-Ⓒ<br>35.3 Vp-p (H) |
| ⑤ IC108-⑱<br>6.56 Vp-p (V) | ⑮ J104-④<br>313 mVp-p (H) |
| ⑥ IC108-⑯<br>7.0 Vp-p (15.723 MHz) | |
| ⑦ IC108-⑫<br>550 mVp-p (15.723 MHz) | |
| ⑧ IC108-⑥<br>2.36 Vp-p (V) | |
| ⑨ IC108-②<br>1.1 Vp-p (V) | |
| ⑩ IC108-①<br>625 mVp-p (V) | |


8-4

**Serial No. 100001–(UC, J)**
**Serial No. 400001–(CE)**




**G** -Component side-

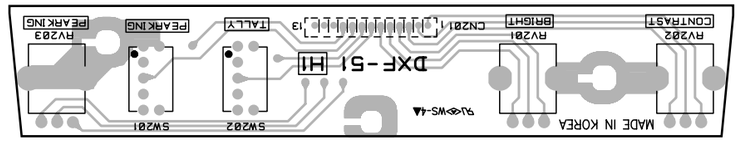



**G** -Conductor side-

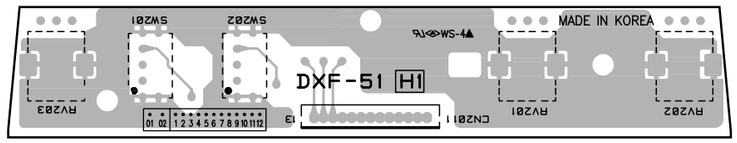
## G BOARD

* : Conductor side

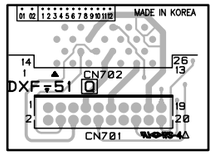
| | | |
|---|---|---|
| D501 | | F-6 |
| D502 | | B-2 |
| IC501 | * | F-4 |
| Q501 | * | G-4 |
| Q502 | * | G-5 |
| Q503 | | E-4 |
| RV501 | | E-2 |
| TP501 | | H-6 |
| TP502 | | H-6 |
| TP503 | | H-2 |



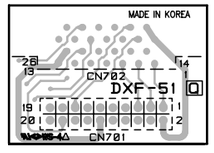

**H1** -Component side-




**H1** -Conductor side-

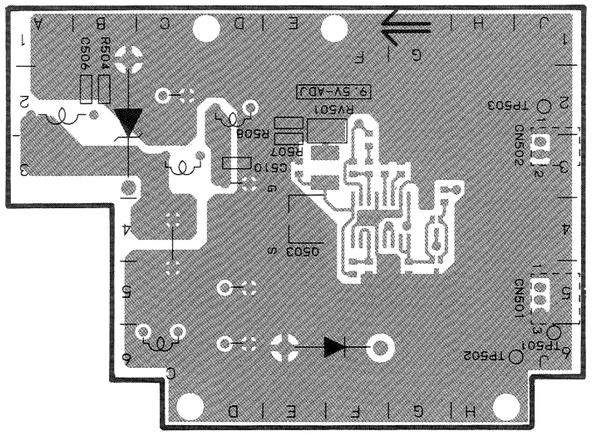



**Q** -Component side-




**Q** -Conductor side-

**Serial No. 10001–(UC)**
**Serial No. 30001–(J)**
**Serial No. 40001–(AEP)**

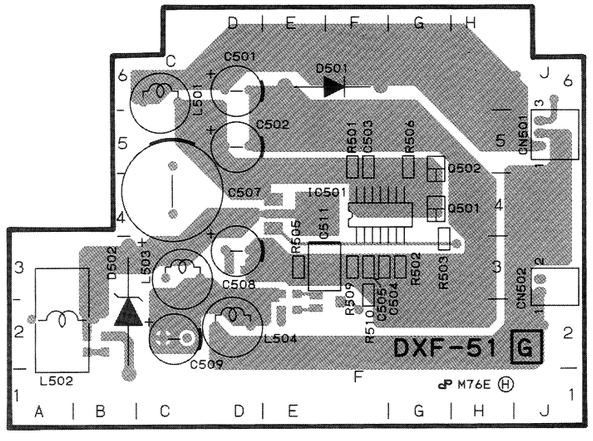



**G** -Component side-

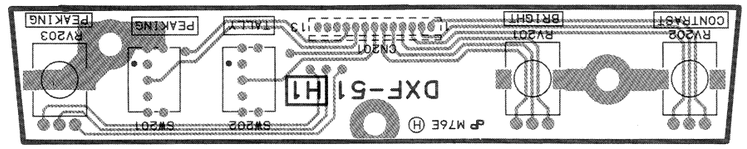
## G BOARD

* : Conductor side

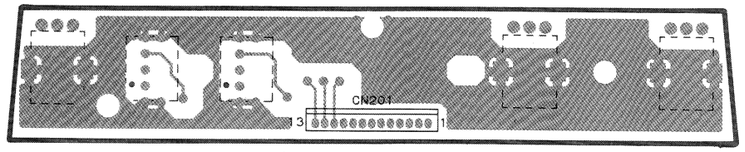
| | | |
|---|---|---|
| D501 | | F-6 |
| D502 | | B-2 |
| IC501 | * | F-4 |
| Q501 | * | G-4 |
| Q502 | * | G-5 |
| Q503 | | E-4 |
| RV501 | | E-2 |
| TP501 | | H-6 |
| TP502 | | H-6 |
| TP503 | | H-2 |



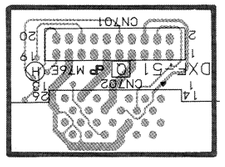

**G** -Conductor side-



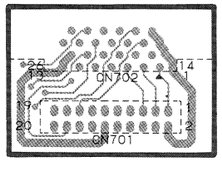

**H1** -Component side-



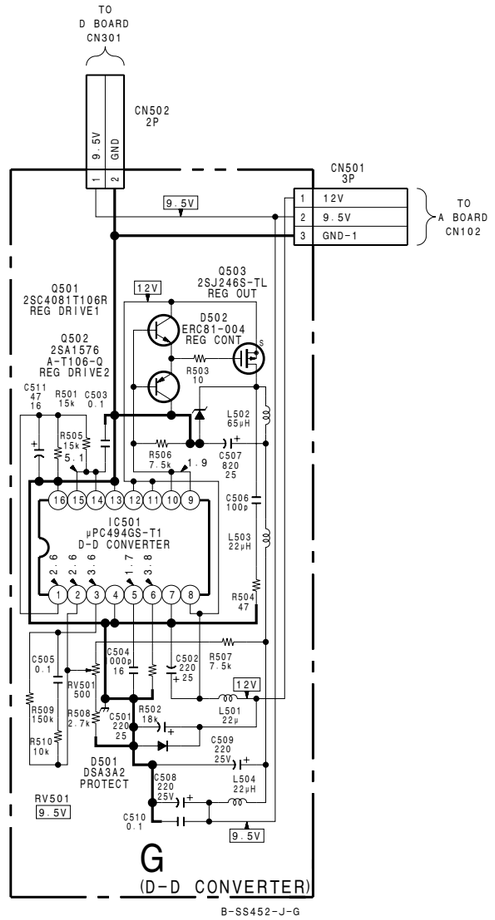

**H1** -Conductor side-

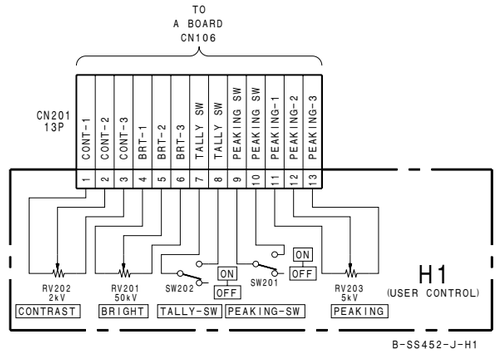


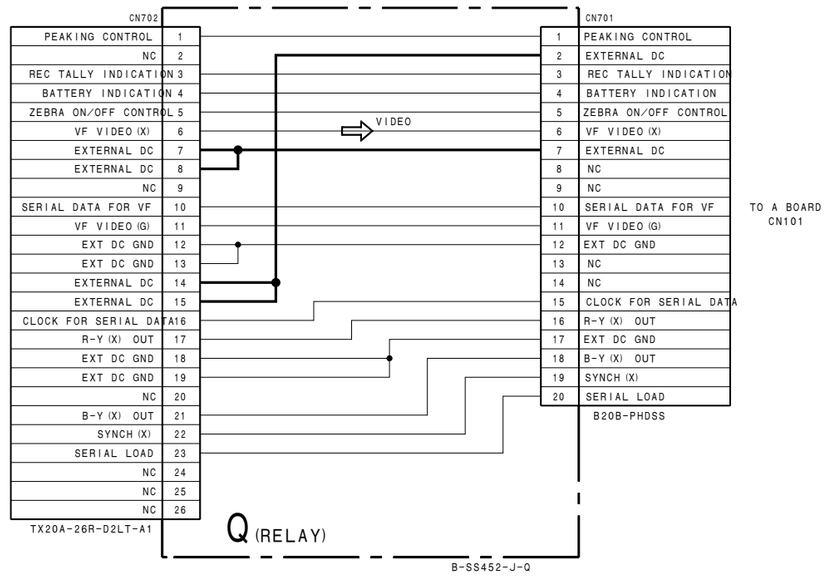

**Q** -Component side-



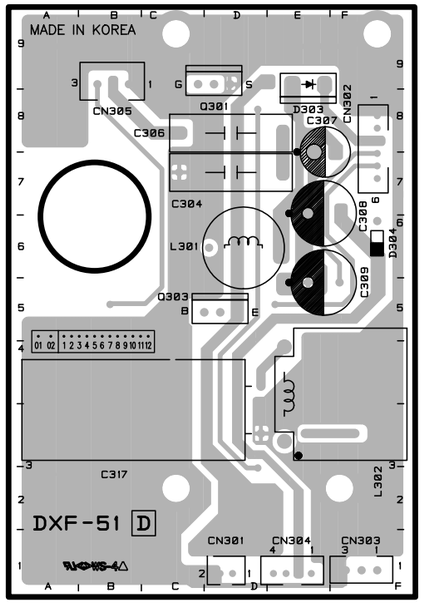

**Q** -Conductor side-


TO
D BOARD
CN301
CN502
2P
9.5V
GND
CN501
3P
1 12V
2 9.5V
3 GND-1
TO
A BOARD
CN102
Q501
2SC4081T106R
REG DRIVE1
Q502
2SA1576
A-T106-Q
REG DRIVE2
Q503
2SJ246S-TL
REG OUT
D502
ERC81-004
REG CONT
IC501
μPC494GS-T1
D-D CONVERTER
D501
DSA3A2
PROTECT
RV501
9.5V
G
(D-D CONVERTER)
B-SS452-J-G

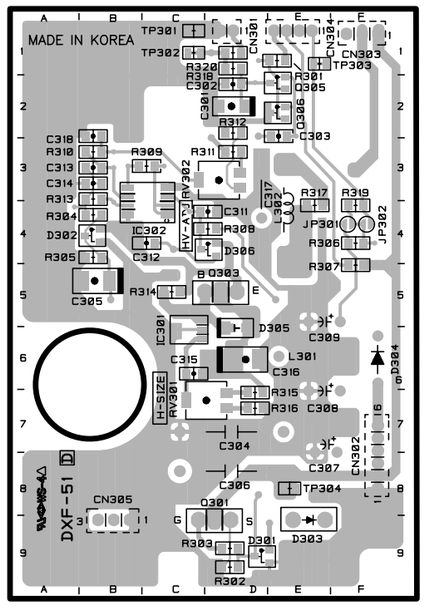

TO
A BOARD
CN106
CN201
13P
CONT-1
CONT-2
CONT-3
BRT-1
BRT-2
BRT-3
TALLY SW
TALLY SW
PEAKING SW
PEAKING SW
PEAKING-1
PEAKING-2
PEAKING-3
RV202
2kV
CONTRAST
RV201
50kV
BRIGHT
SW202
TALLY-SW
SW201
PEAKING-SW
RV203
5kV
PEAKING
ON
OFF
H1
(USER CONTROL)
B-SS452-J-H1


CN702
PEAKING CONTROL 1
NC 2
REC TALLY INDICATION 3
BATTERY INDICATION 4
ZEBRA ON/OFF CONTROL 5
VF VIDEO (X) 6
EXTERNAL DC 7
EXTERNAL DC 8
NC 9
SERIAL DATA FOR VF 10
VF VIDEO (G) 11
EXT DC GND 12
EXT DC GND 13
EXTERNAL DC 14
EXTERNAL DC 15
CLOCK FOR SERIAL DATA 16
R-Y (X) OUT 17
EXT DC GND 18
EXT DC GND 19
NC 20
B-Y (X) OUT 21
SYNCH (X) 22
SERIAL LOAD 23
NC 24
NC 25
NC 26
TX20A-26R-D2LT-A1
VIDEO
CN701
1 PEAKING CONTROL
2 EXTERNAL DC
3 REC TALLY INDICATION
4 BATTERY INDICATION
5 ZEBRA ON/OFF CONTROL
6 VF VIDEO (X)
7 EXTERNAL DC
8 NC
9 NC
10 SERIAL DATA FOR VF
11 VF VIDEO (G)
12 EXT DC GND
13 NC
14 NC
15 CLOCK FOR SERIAL DATA
16 R-Y (X) OUT
17 EXT DC GND
18 B-Y (X) OUT
19 SYNCH (X)
20 SERIAL LOAD
B20B-PHDSS
TO A BOARD
CN101
Q (RELAY)
B-SS452-J-Q

Serial No. 100001–(UC, J)
Serial No. 400001–(CE)




**D** -Component side-

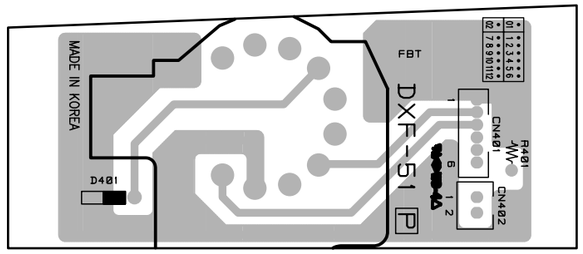



**D** -Conductor side-

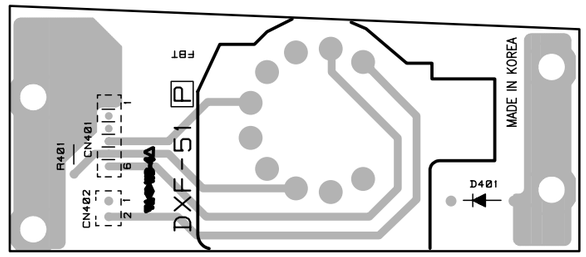
## D BOARD

* : Conductor side

| | | |
|---|---|---|
| D301 | * | D-9 |
| D303 | | E-8 |
| D304 | * | F-6 |
| D305 | * | D-5 |
| D306 | * | D-4 |
| IC301 | * | C-5 |
| IC302 | * | C-4 |
| Q301 | | D-8 |
| Q303 | | D-5 |
| Q305 | * | E-2 |
| Q306 | * | E-2 |
| RV301 | * | C-7 |
| RV302 | * | C-3 |
| TP301 | * | C-1 |
| TP302 | * | C-1 |
| TP303 | * | E-1 |
| TP304 | * | E-8 |

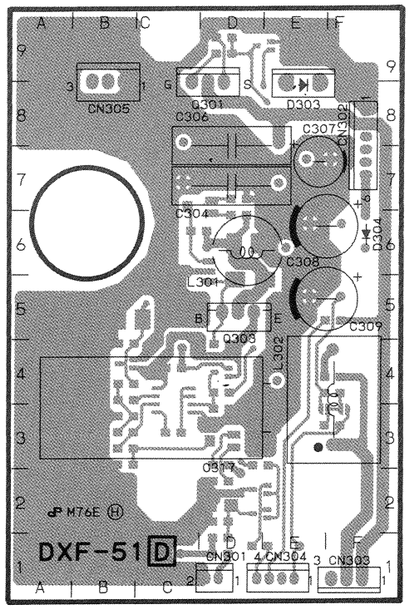



**P** -Component side-




**P** -Conductor side-

**Serial No. 10001–(UC)**
**Serial No. 30001–(J)**
**Serial No. 40001–(AEP)**

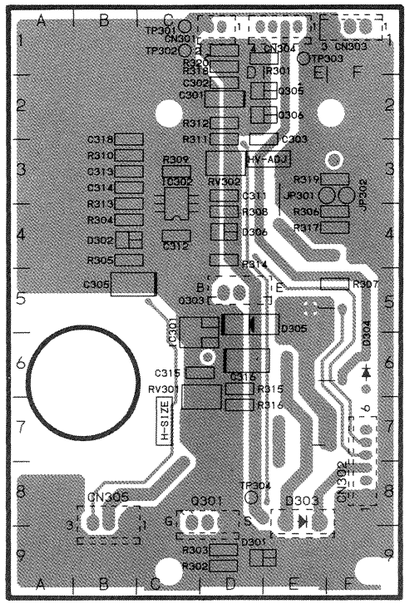



**D** -Component side-

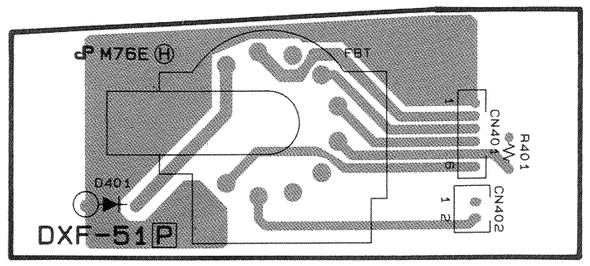
## D BOARD

* : Conductor side

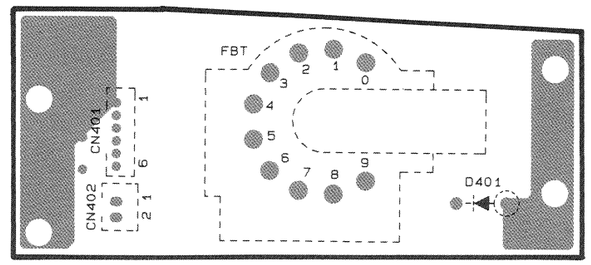
| | | |
|---|---|---|
| D301 | * | D-9 |
| D303 | | E-8 |
| D304 | * | F-6 |
| D305 | * | D-5 |
| D306 | * | D-4 |
| IC301 | * | C-5 |
| IC302 | * | C-4 |
| Q301 | | D-8 |
| Q303 | | D-5 |
| Q305 | * | E-2 |
| Q306 | * | E-2 |
| RV301 | * | C-7 |
| RV302 | * | C-3 |
| TP301 | * | C-1 |
| TP302 | * | C-1 |
| TP303 | * | E-1 |
| TP304 | * | E-8 |



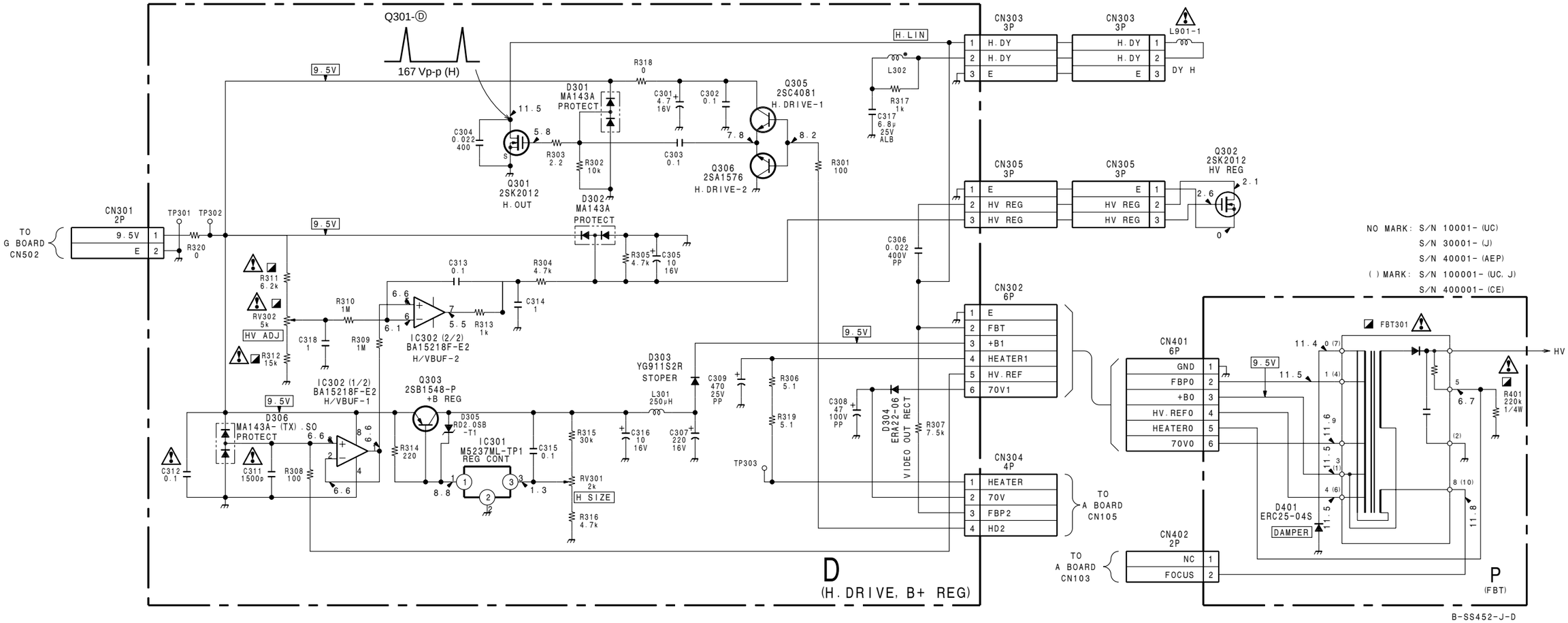

**D** -Conductor side-




**P** -Component side-




**P** -Conductor side-


Q301-Ⓓ
167 Vp-p (H)
9.5V
H.LIN
CN303 3P
CN303 3P
L901-1
DY H
H.DY
E
L302
R317 1k
C317 6.8µ 25V ALB
D301 MA143A PROTECT
R318 0
C301 4.7 16V
C302 0.1
Q305 2SC4081 H.DRIVE-1
Q306 2SA1576 H.DRIVE-2
C304 0.022 400
R303 2.2
R302 10k
C303 0.1
R301 100
Q301 2SK2012 H.OUT
D302 MA143A PROTECT
CN305 3P
CN305 3P
Q302 2SK2012 HV REG
HV REG
C306 0.022 400V PP
CN301 2P
TO G BOARD CN502
9.5V
E
TP301
TP302
R320 0
R311 6.2k
RV302 5k
HV ADJ
R312 15k
C313 0.1
R304 4.7k
R305 4.7k
C305 10 16V
C314 1
R310 1M
R309 1M
C318 1
R313 1k
IC302 (2/2) BA15218F-E2 H/VBUF-2
IC302 (1/2) BA15218F-E2 H/VBUF-1
CN302 6P
D303 YG911S2R STOPER
L301 250µH
C309 470 25V PP
R306 5.1
R319 5.1
C308 47 100V PP
D304 ERA22-06 VIDEO OUT RECT
R307 7.5k
TP303
Q303 2SB1548-P +B REG
D305 RD2.0SB -T1
D306 MA143A-(TX).SO PROTECT
C312 0.1
C311 1500p
R308 100
R314 220
IC301 M5237ML-TP1 REG CONT
C315 0.1
R315 30k
C316 10 16V
C307 220 16V
RV301 2k
H SIZE
R316 4.7k
CN304 4P
TO A BOARD CN105
CN401 6P
GND
FBP0
+B0
HV.REF0
HEATER0
70V0
FBT301
HV
R401 220k 1/4W
D401 ERC25-04S
DAMPER
CN402 2P
TO A BOARD CN103
NC
FOCUS
NO MARK: S/N 10001- (UC)
S/N 30001- (J)
S/N 40001- (AEP)
( ) MARK: S/N 100001- (UC, J)
S/N 400001- (CE)
D
(H.DRIVE, B+ REG)
P
(FBT)
B-SS452-J-D

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer :

Check the metal trim, “metallized” knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers’ instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The “limit” indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

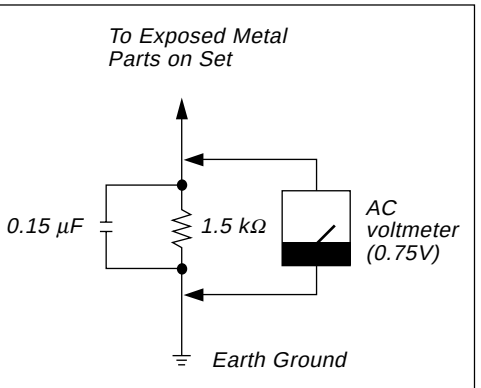



*Fig A. Using an AC voltmeter to check AC leakage.*

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